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Stakeholder Management Innovation in the Utilization of Right-of-Way on Major Arterial Roads in Bogor Regency

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Abstract: The development of major arterial roads and pedestrian infrastructure in the Cibinong Raya area to prepare for hosting the U-20 World Cup in 2023, is a leading program that uses up to 30% of the Bogor Regency infrastructure budget. Development with a large budget requires appropriately applied stakeholder management of infrastructure assets, through supervision and control of road assets accommodated in the licensing activities for using the right-of-way, to reduce the risk of physical damage to assets due to violations. The Result-Based Management Model was used to evaluate the control of asset utilization in providing technical recommendations for right-of-way utilization. Then, through ordinal scale weighting followed by in-depth interviews, an innovation model for stakeholder management risk control was obtained that is appropriate for the use of right-of-way on major arterial roads in Bogor Regency. The weighting of the stakeholder management indicators showed that the risk control aspect was the weakest element so it was necessary to emphasize the integration of the Risk Control function into each management indicator.

Keyword: Right of Way, Stakeholder Management, Risk Control.

INTRODUCTION

Stable and functional infrastructure in a country is essential for sustainable economic development (Gardoni et al, 2020). Infrastructure facilities such as roads, drinking water networks, wastewater systems, gas pipelines, and telecommunication networks are essential for daily operations and for the sustainable development of high-density cities (Zhong et al, 2019). Infrastructure assets are directly related to the economic growth of a nation and the quality of life of its citizens (Park et al., 2016).

One of the road pavement structures in the form of sidewalks is the main fundamental element of road assets to be maintained, rehabilitated, and reconstructed (Valenzuela et al., 2017). Pedestrians are one of the infrastructures in the road space area whose physical condition must be maintained because they affect the comfort of pedestrians and the formation of urban visual character, as conveyed at the peak of the Road Day Commemoration in 2022, the Minister of Public Works and Housing/PUPR reiterated the importance of road and bridge

infrastructure maintenance as the State Property (BMN) assets and the power of the bureaucracy in controlling its use.

The Bogor Regency government has allocated a large budget for the development and improvement of road infrastructure. One of the strategic projects, which is the main focus, is the arrangement of strategic corridors on major arterial roads, including Kandang Roda-Sentul Road, Tegar Beriman Road, and Pakansari area. With a total length of 11,985 meters, these roads serve as the main artery/high street between the Bogor Regency entrance gate (Jagorawi Toll Road) and the center of government and regional economy. However, along with the rapid development of road infrastructure in Bogor Regency, especially on major arterial roads such as Kandang Roda-Sentul, Tegar Beriman, and Pakansari area, there was a significant increase in the use of the right-of-way by various parties. Ideally, the right-of-way functions as part of the road infrastructure. Its existence must be maintained to support traffic safety and smoothness, including road widening, pedestrian paths, installation of utilities, and securing road assets.

Field observation results showed that around 50% of the use of right-of-way space in Bogor Regency was not officially permitted or without fulfilling the obligation to restore the condition of road as per its technical recommendations. Visual observations also showed various forms of the right-of-way function misuse, such as physical damage to sidewalks, roadsides, and pedestrian paths caused by heavy vehicles crossing by or parking carelessly, as well as the installation of advertising media that was not prescribed by the regulations. This problem was further compounded by the lack of coordination mechanisms among stakeholders, local governments, business owners, and utility service providers.

It is important to manage the communication and information to align these stakeholders. Therefore, it requires more an effective coordination mechanism among stakeholders, local governments, business owners, and utility service providers, so that every activity related to the use of the right-of-way can be carried out with clear and responsible standards. This study aims to develop innovation in stakeholders' management in the utilization of right-of-way space in major arterial roads of Bogor Regency. The proposed innovative model is developed through ordinal scale weighting of five main indicators in stakeholder management, namely Identification & Classification (IC), Communication (C), Involvement (E), Empowerment (EP), and Risk Control (RC).

Research Questions

1. What are the technical procedures and regulations in providing recommendations for the right-of-way utilization on major arterial roads in Bogor Regency?
2. How far the roles and involvement levels of stakeholders in the process of right-of-way utilization on major arterial roads in Bogor Regency?
3. What are the most urgent factors to be managed in stakeholder management, so that innovations can be developed to improve the effectiveness of supervision and control of right-of-way utilization?

Research Purposes

1. To identify and analyze the procedures and regulations related to the provision of recommendations for the use of right-of-way on major arterial roads in Bogor Regency.
2. To assess the role, involvement, and communication patterns among stakeholders in the process of right-of-way utilization in the research area.
3. To develop a stakeholder management innovation model with an emphasis on the risk control aspect, based on ordinal scale weighting of five main indicators: Identification & Classification (IC), Communication (C), Involvement (E), Empowerment (EP), and Risk Control (RC).

Research Benefit

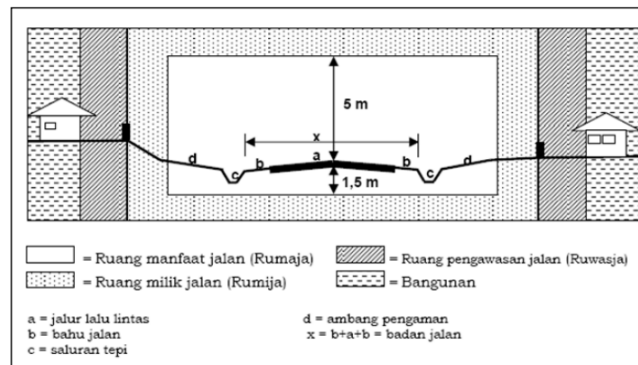
1. To add insight into the study of stakeholder management in the right-of-way space utilization, especially in the context of major arterial road infrastructure at the regional level.
2. To contribute to the development of innovative models in the governance of right-of-way utilization, which can be used as a reference in academic research related to public asset management and infrastructure asset governance.
3. To provide a comprehensive overview of licensing procedures and supervision of the right-of-way utilization, so that it can be used as the basis for improving policies by regional governments in optimizing the management of road space assets in a legal and controlled way.
4. To provide recommendations for stakeholders, such as government, business owners, and the community, in improving coordination, collaboration, and compliance with regulations on the right-of-way utilization.
5. To encourage the implementation of innovation in stakeholder management, such as digitalization of right-of-way utilization data, technology-based asset monitoring, and a more effective and collaborative monitoring mechanisms.

LITERATURE REVIEW

1. Road Management and Utilization

Road management is an activity on the arrangement, development, construction, and supervision of roads. Road operators are parties that carry out the arrangement, development, construction, and supervision of roads by their authority (source, year).

To ensure orderly use of roads, road operators must maintain parts of the road so that they always function properly (Government Regulation No. 34, 2006). Meanwhile, parts of the road according to Government Regulation No. 34 of 2006 concerning Roads, such as roadway, right-of-way, and road supervision space, can be seen in Figure 1.



Source: Government Regulation number 34 of 2006

Figure 1. Road parts

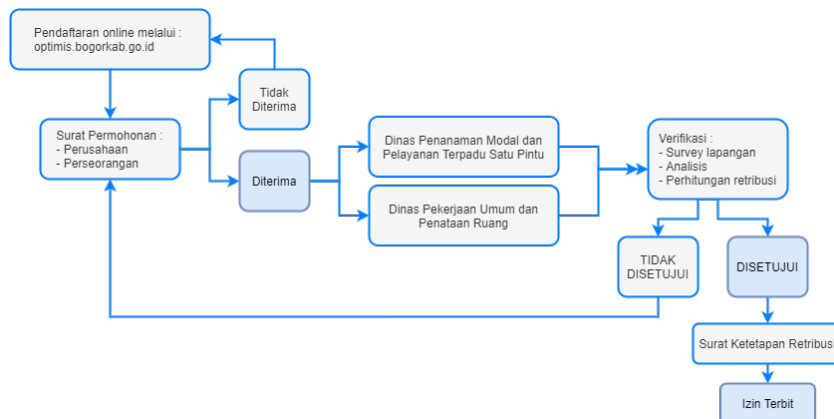
2. Right-of-Way Utilization

Right-of-way utilization must be permitted by the road operator in accordance with its authority. According to Article 18, everyone is prohibited from utilizing the roadway that disturb the road function. In addition, the permit holder is required to restore the condition of the right-of-way to its original condition if necessary for the operation of the road (Article 21).

The procedure for utilizing the right-of-way involves several administrative and technical stages to ensure its safety, smooth traffic flow, and the sustainability of road infrastructure, including:

- a. Legal Basis for Right-of-way Utilization
 - Government Regulation Number 34/2006 concerning Roads (Articles 17-21), regulates the definition of right-of-way, conditions for the use, and obligations of permit holders.

- Regulation of Public Works and Housing/PUPR Minister Number 20/2010 concerning Guidelines for the Utilization of Roadway and Right-of-way, explains the technical licensing, requirements, and limitations on utilization.
 - Regional Regulations (*Perda*) for each district/city, determine the amount of retribution, licensing mechanisms, and sanctions for violations.
- b. General Procedures for Right-of-way Utilization consist of Submission of application, administrative verification, technical evaluation by the Public Works and Housing/PUPR Office, Payment of Retribution, Issuance of Permit, Supervision and evaluation.

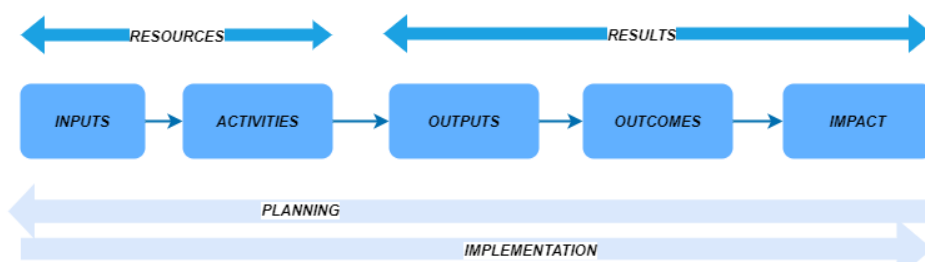


Source: DPUPR, 2018

Figure 2. Recommendation Request Mechanism

3. Result Based Management (RBM)

RBM in UNDP Handbook, 2009 is defined as a broad management strategy that aims to achieve performance improvement and demonstrable results. RBM has been adopted by many multilateral development organizations, bilateral development agencies, and public administrations around the world (as mentioned earlier, some of these organizations now call RBM as Management for Development Results (MfDR) as the emphasis on the development process rather than organizational results (source, year). Result-based asset management (RBM) is a structured way to ensure the achievement of an organization's objectives by maximizing its assets over time, and achieving sustainable value by balancing cost and performance with risk mitigation (Raconteur, 2017). Asset management means focusing on asset life cycle activities and maintenance; asset location, condition, life extension or intervention; asset database, systems and performance; people, skills and work management; budget and key performance indicators/maintenance costs and current performance. Asset management recognizes the value of the asset in use, which involves developing a desired balance of performance, cost, and risk (GFMAM, 2016).



Source: UNDP, 2009

Figure 3. Logical Model of RBM

The logical model of the RBM above can also be called a results framework that can be equipped with all outcomes, outputs, activities and inputs that have been identified by stakeholders. Outcomes must be specific, measurable, achievable, relevant and time-bound/SMART.

4. Stakeholder Management

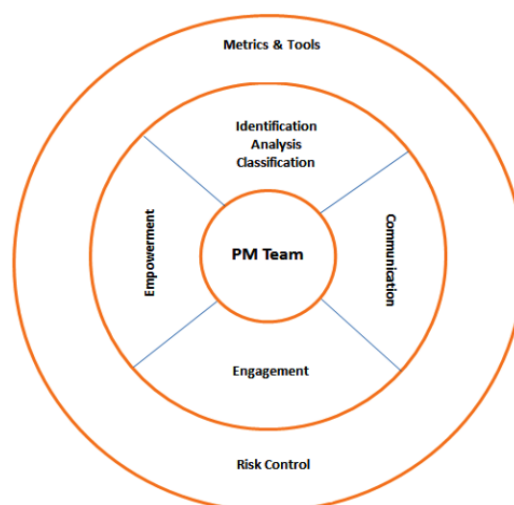
Infrastructure assets involve multiple stakeholders, including asset owners, asset operators, asset managers, and asset users. Meeting the requirements and expectations of different stakeholders is often the biggest challenge (Parlikad and Jafari, 2016). Stakeholders are individuals or groups who can influence or be influenced by the achievement of organizational goals (Freeman, 2010), so that stakeholder management can strengthen the effects of project governance, which then improves the performance of public infrastructure projects (Khan, 2021), in the context of right-of-way management, stakeholder management is key to ensure that all involved parties can work together effectively to achieve mutual goals.

Active stakeholder involvement in the decision-making process can improve regulatory compliance and reduce conflicts of interest. In addition, according to Bryson (2004), effective stakeholder management requires a participatory approach that involves all parties from the planning stage to the evaluation stage.

RBM Handbook (2017) categorizes stakeholders based on the resulting initiatives:

- Primary stakeholders: directly impacted people/organizations both positively and negatively by the organization's policies.
- Secondary stakeholders: indirectly impacted people/organizations by the policy.
- Key stakeholders: can be one/none of the primary/secondary stakeholders. They can have a positive/negative impact on an organization, or important parties who have a primary agreement.

Mahmoud Rajablu (in 2014 and 2017) used stakeholder theory and examined the role of the stakeholder management concept to find variables that have a direct influence on stakeholder integration. Manage through stakeholders refers to a management approach that emphasizes the management and involvement of various stakeholders in a project or organization to achieve mutual goals. This approach involves identifying, analyzing, and managing stakeholders to ensure their support and participation in the decision-making and implementation process. This model is not only conceptual but also applicable because it is equipped by metrics and tools as supporting instruments in its implementation (Rajablu et al, 2017).



Source: Rajablu, 2014

Figure 4. Stakeholder Metrics-Based Management Framework

1. Identification and Classification

At this stage, the project manager or program manager identifies all parties (stakeholders) who have an interest in the project. This process does not only include individuals or internal groups, but also external groups who may be affected or have an influence on the success of the project. Identification is based on the dimensions such as power, interest, legitimacy, and urgency, as described in the TSIA model.

2. Communication

Once stakeholders are identified, it is important to establish effective communication. In this stage, project information should be open, transparent and on time. This communication aims to build trust, prevent conflict and maintain good working relationships with all stakeholders. Communication methods can be in the form of meetings, social media, local newspapers or direct approaches according to the characteristics of the stakeholders.

3. Engagement

Stakeholder engagement means involving them in decision-making and project implementation. Engagement is conducted in a participatory manner so that stakeholders feel they have contributed to the project. This also aims to increase commitment and reduce resistance to innovation or implemented changes.

4. Empowerment

Stakeholder empowerment is the process of giving stakeholders the capacity, authority, or resources to take a more active role. This empowerment can be through training, outreach, or collaborative partnerships. By empowering stakeholders, the potential for conflict can be reduced because they feel valued and directly involved in the project's outcomes.

5. Risk Control

One of the stakeholder management roles is to control risks that caused by stakeholder influence. This includes risks from any parties opposing the project, policy changes, or interest inconsistencies among groups. By understanding the power and influence of each stakeholder, managers can create appropriate mitigation strategies, including negotiation approaches or strategic alliances.

The Stakeholder Metrics-Based Management Framework model is very relevant to be used as a basis for developing an innovative framework for stakeholder management, especially in the context of Right-of-way utilization. Right-of-way utilization involves various actors with diverse interests, such as government agencies, business owners, and road users.

METHOD

This study used an exploratory sequential mixed methods approach, which begins with field observation, then continued with a qualitative approach to gain an in-depth understanding of stakeholder management in the right-of-way utilization. After that, the study continued with a descriptive quantitative approach to provide an assessment of the main variables that have been formerly identified.

In the qualitative stage, the phenomenological method was used to explore the experiences of stakeholders, namely the Investment and One-Stop Integrated Service Office (DPMPSTSP), the Public Works and Spatial Planning Office (DPUPR), the Civil Service Police Unit (Satpol PP), business owners, and the community as the right-of-way users. This approach was chosen to deeply explore their views on the effectiveness of the supervision system, obstacles to regulations implementation, and the potential for innovation in controlling the right-of-way utilization.

Furthermore, in the quantitative stage, weighting was conducted by using an ordinal scale for five main indicators in stakeholder management, namely: identification and classification

(IC), communication (C), involvement (E), empowerment (EP), and risk control (RC). This assessment was based on the informant's perception of the effectiveness and urgency of each indicator, to determine the priority of innovative strategies in managing the right-of-way.

RESULTS AND DISCUSSION

Key informants involved in this research were:

1. Policy Informants from the Investment and One-Stop Integrated Services Office (DPMPTSP), the Public Works and Spatial Planning Office (DPUPR), and the Civil Service Police Unit (Satpol PP) who are responsible for formulating policies, regulations, and supervising the use of right-of-way.
2. Technical Informants, namely technical staff from DPUPR and DPMPTSP who have duties in implementing policies, licensing processes, and technical supervision in the field.
3. Right-of-way User Informants, consisting of business owners and the public who use right-of-way for various purposes, such as parking, business activities, or public access.
4. Additional Informants (Users), namely academics and spatial planning experts who provide scientific perspectives on the right-of-way policies, management effectiveness, and innovations that can be implemented.

The results of interviews with various categories of informants showed that the management of right-of-way in Bogor Regency still faced various challenges, both in terms of regulation, technical implementation, user compliance, and innovation supervision.

Stakeholder Management Indicator Weighting Results

To identify risk priorities in the management of Right-of-way, this study used an ordinal weighting approach to five main indicators in stakeholder management. This weighting is compiled based on the results of in-depth interviews with several key informants, such as representatives from government offices (DPMPTSP, DPUPR, and Satpol PP), business owners who used right-of-way, road users, and academics who understood road infrastructure governance.

The five main indicators that used as the basis for weighting are:

1. Identification and Classification (IC) assesses the agency's ability to identify and classify all stakeholders;
2. Communication (C) reflects the quality of two-way communication between the government and stakeholders regarding the use of right-of-way;
3. Engagement (E) measures how far stakeholders are actively involved in the decision-making and process monitoring;
4. Empowerment (EP) measures how far stakeholders are given space, capacity and trust to contribute to management; and
5. Risk Control (RC) assesses the effectiveness of anticipatory strategies against potential violations, and the impact of right-of-way utilization that does not comply with the provisions.

The assessment of the five indicators was carried out using an ordinal scale method from a score of 1 to 5. The average score indicated the collective perception of the informants regarding the level of importance of each indicator. The assessment categories were grouped into five, namely: not important (≤ 2.0), less important (2.1–3.0), quite important (3.1–3.5), important (3.6–4.0), and very important (4.1–5.0). The weighting results are presented in the following table:

Indicator of Stakeholder Management	Code	Average Scores	Assessment Category
Identification and Classification	IC	3.6	Quite Important – Need to improve the applicant database
Communication	C	3.8	Important – Coordination between agencies is not optimal yet
Engagement	E	3.4	Quite Important – Limited participation
Empowerment	EP	3.2	Not Important – Lack of public involvement after granting permission
Risk Control	RC	4.5	Very Important – Crucial and priority for innovation

Source: research results

Table 1. Weighting Results of Stakeholder Management Indicators

Based on Table 1, the Risk Control (RC) indicator had the highest score as many as 4.5, it indicated that this aspect was considered as the most important and urgent factor by informants in the context of right-of-way management. This high score reflected a very strong need for strengthening the supervision system, considering that there were still serious challenges in the field such as weak coordination among offices, limited number and capacity of supervisors, and not optimal use of technology for real-time monitoring. Therefore, RC was the main focus in stakeholder management reform efforts.

On the other hand, the Empowerment (EP) indicator had the lowest score as many as 3.2, and was categorized as quite important. This result showed that the involvement of stakeholders, especially the general public, in the decision-making process and post-licensing supervision was still low. This low empowerment impacted on the low level of transparency and active participation from the public, which should be an important part of inclusive and sustainable governance.

Meanwhile, the scores of Communication (C) and Identification and Classification (IC) indicators were respectively 3.8 and 3.6, and can be classified into the important category. This showed that although the communication and stakeholder mapping mechanisms have been running, their implementation has not been fully optimal. There were still obstacles in data synchronization, as well as a lack of integration of information systems among offices. It impacted on the delays in responding to the dynamics of right-of-way utilization.

The Engagement (E) indicator score was 3.4. It showed that the form of stakeholder participation still tends to be formal and administrative. This involvement has not fully developed into strategic collaboration in the planning, implementation, and evaluation processes of policies.

Based on these results, future innovative strategies need to be focused on strengthening the risk control system as a top priority, complemented by optimizing inter-office communication and increasing stakeholder empowerment to encourage the creation of a more adaptive, inclusive and participatory right-of-way management system.

Stakeholder Management Innovation Model

Based on the results of the analysis and weighting to the stakeholder management dimension in the utilization of Right-of-way on major arterial roads in Bogor Regency, it was identified that the Risk Control indicator was the highest score. It indicated that this aspect was the weakest point and also required the most handling in the current stakeholder management. This condition showed that there was no strong risk control mechanism, both in terms of the

reporting system, supervision, imposition of sanctions, and preventive measures against potential conflicts or misuse of right-of-way utilization.

Therefore, a new approach is needed in the form of a stakeholder management innovation model that is systematic, integrative, and responsive to local conditions. This model integrates four main stages in sustainable stakeholder management, namely:

1. **Identification and Classification (IC)**

The identification and classification process is a very crucial initial stage in stakeholder management. At this stage, all stakeholders involved or affected by the right-of-way utilization policy need to be mapped and grouped based on their roles, level of interest, and influence on the policy and its implementation. With proper mapping, local governments can develop more targeted and right communication, engagement, and empowerment strategies. In addition, stakeholder classification also allows for early identification of potential conflicts, so that mitigation strategies can be preventively prepared. High-influence stakeholders but low interests, for example, need to be treated differently from those who have high interests but low influence. Therefore, stakeholder mapping and interest-influence matrix are important tools at this stage.

2. **Communication (C)**

Communication connects the planning and realization of right-of-way utilization policies. The built communication must be two-way, open, adaptive, and responsive, to enable the creation of effective information channels between government offices, business owners, and the community. Good communication encourages the creation of a shared understanding and reduces the potential for resistance to policies. In addition, effective communication also allows the community to deliver their aspirations, reports of any violations, or information needs related to the utilization of right-of-way. Therefore, flexible and easily accessible communication media are needed, both in conventional forms such as face-to-face forums, and technology-based forms such as websites, public service chatbots, official social media, and e-feedback platforms. The success of communication in this context can be measured by the level of participation, the volume of public report, and the speed of office response to incoming complaints.

3. **Engagement (E)**

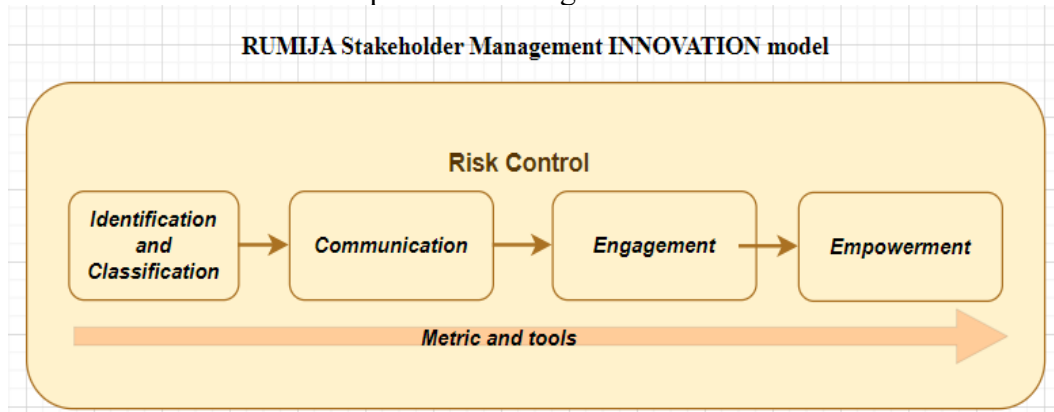
The engagement stage emphasizes the importance of active participation from all stakeholders in the right-of-way utilization policy cycle, starting from the policy formulation stage, technical implementation in the field, to evaluation and supervision. This participation is not only symbolic but must be substantial in decision-making. The involvement of the community, business owners, and academics in focus group discussions, public hearings, and community-based monitoring will strengthen the legitimacy of the policy and create a sense of policy ownership. In addition, this approach also provides space for stakeholders to deliver critical views, contribute ideas, and directly supervise the implementation of the policy. Therefore, engagement is an important part of establishing transparent and accountable participatory governance.

4. **Empowerment (EP)**

Stakeholder empowerment is the foundation for the sustainability of the right-of-way management program. In this context, empowerment includes the process of increasing the capacity of stakeholders to be able to understand their rights and obligations, and have adequate skills to play an active role in the licensing, supervision, and reporting processes. Education and training are an important part of this stage, especially for road users, business owners, and field technical officers. Through technical training, regional regulation counseling, and digital-based educational media, it is expected that stakeholders will be created who are aware of regulations and proactive in maintaining orderly use of the right-of-way. In addition,

empowerment can also be realized in the form of providing non-financial incentives such as compliance recognition, as well as the implementation of a fair and transparent reward and punishment system.

These four stages are arranged in an integrative framework that is based on the Risk Control approach as the main foundation, which oversees and cover the entire management process. The visualization of this model is presented in Figure IV.1 below:



Source: Research Result

Figure 5. Innovation Model for Stakeholder Management in Right-of-way Utilization

The innovation model of stakeholder management in the Right-of-way utilization in Bogor Regency emphasizes the importance of integrating the Risk Control function into each main indicator of management. Without adequate risk control, stages such as identification, communication, involvement, and empowerment of stakeholders will not run effectively and sustainably. Therefore, Risk Control is positioned as a key element that must be integrated into the entire management process, not only as a complement, but also as a safeguard against the possibility of deviations, conflicts of interest, or violations in the right-of-way utilization.

The weighting results showed that Risk Control is the indicator with the highest value. It indicated the most urgent point of weakness that needed to be followed up immediately. The risk in the Identification and Classification (IC) indicator arises when stakeholders are not accurately identified, which can lead to imbalances in involvement or even inaccuracy in decision-making. In the Communication (C) indicator, the risk occurs when there is no effective communication channel, therefore the community and business owners' aspirations are not fully delivered to government offices. The Engagement (E) indicator faces the risk of resistance to policies if the community or business owners feel that they are not involved in the process of formulating or supervising the implementation of policies. Meanwhile, in the Empowerment (EP) indicator, the risk arises if stakeholders do not have a sufficient understanding of the rights, obligations, and sanctions that apply in the use of right-of-way.

The strategy for implementing this model is structured by referring to indicators, key stakeholders, measures of success, and supporting facilities that can be used to achieve more participatory and accountable management goals. In the Identification and Classification indicator, the main stakeholders involved are DPMPTSP, DPUPR, and Satpol PP. The success of this indicator is demonstrated by the identification of all stakeholders according to their respective interests, influence, and authority. This process is supported by tools such as stakeholder maps, influence and interest matrices, and a routine inter-office coordination forums.

In the Communication indicator, stakeholders who play a role are DPMPTSP through the information division, business owners, and the general public as the users of right-of-way. The success of this indicator can be seen from the formation of an active and open two-way communication system between the government and the community. The supporting facilities are public information service websites, interactive social media, and directly and online

communication forums organization. Furthermore, in the Engagement indicator, the main stakeholders involved are DPUPR, road user communities, and academics. The high level of stakeholders' participation in the policy formulation process and mutual supervision is the benchmark for the success of this indicator. This involvement effort is supported by the implementation of workshops, public meetings, community discussion forums, and offline and online hearing activities.

The Empowerment indicator involves Satpol PP, business owners, and the community as the main stakeholders. The success of this indicator is achieved if there is a significant increase in understanding and compliance with right-of-way utilization regulations. This empowerment process is facilitated by technical training, digital-based education, distribution of infographics, and the preparation of licensing guide modules that are easy to access and understand. These four indicators are designed to support each other and form an adaptive, collaborative, and sustainability-oriented stakeholder management system.

By integrating the Risk Control function into each of these indicators, this innovation model is expected to be the solution to various challenges that have been faced in managing the right-of-way utilization. This approach not only prioritizes the principle of coordination among offices but also encourages active participation of the community as strategic partners in supervision and decision-making. In the future, this model is expected to be a reference in the preparation of risk-based policies, strengthening efficient supervision systems, and increasing sustainable cross-sector capacity in the Bogor Regency area.

Indicator	Main Stakeholder	Success Measures (Metric)	Supporting Facilities (Tools)
IC	DPMPTSP, DPUPR, Satpol PP	Identification of all stakeholders according to their interests, influence, and authority	Stakeholder maps, influence-interest matrix, inter-office coordination forums
C	DPMPTSP (information division), business owners, community	The formation of an active and open communication system between the government and the community/users of right-of-way.	Information service website, interactive social media, face-to-face, and online meetings
E	DPUPR, user community, academics	High level of stakeholder involvement in the policy formulation and mutual monitoring process	Workshop, public consultation, community discussion forums, online and offline hearings
EP	Satpol PP, business owners, community	Increasing understanding and compliance with regulations on the use of right-of-way	Technical training, digital education, infographics, licensing guides in the form of interactive modules

Source: Research Result

Table 2. Stakeholder Management Innovation Implementation Strategy

CONCLUSION

Based on the research result regarding stakeholder management in the utilization of right-of-way in Bogor Regency, it can be concluded that the procedure for providing recommendations for the utilization of right-of-way has a fairly adequate regulatory basis. The procedure includes the stages of submission, administrative verification, technical survey, to the issuance of utilization permits. However, implementation in the field still faced various obstacles, including limited socialization to the community and business owners, less optimal licensing digitalization process, and weak monitoring and evaluation mechanisms after the issuance of permit.

In terms of the role and involvement of stakeholders, it was identified that coordination between related offices, namely the Investment and One-Stop Integrated Service Office (DPMPTSP), the Public Works and Spatial Planning Office (DPUPR), and the Civil Service Police Unit (Satpol PP), has not been running optimally. There was still overlapping authority, unstructured communication patterns, and the absence of a routine coordination forum. On the other hand, community participation in supervising the use of right-of-way was also still low, so that several violations in the field were not monitored and not handled comprehensively.

The results of the weighting of the stakeholder management indicators showed that the risk control aspect was the weakest element and at the same time the most urgent to be fixed. This finding confirmed that the function of supervision and prevention of violations must be the main priority to improve the right-of-way management. Therefore, a strategy to strengthen risk control needs to be carried out immediately, including through the preparation of more detailed technical guidelines, increasing the capacity of human resources in supervision, and implementing strict and consistent sanctions against violations.

The implementation of innovative strategies in stakeholder management is expected to encourage right-of-way utilization in Bogor Regency in an orderly, transparent, and sustainable way. Improving the quality of coordination among offices, developing a digital system to support the licensing and supervision process, and actively involving the community in the supervision will be crucial steps in creating better right-of-way governance in the future.

In a systematic and risk-based management model, it is expected that all stakeholders can play a proportional and responsible role according to their respective functions. Continuity of cross-sector collaboration is the key to realizing the right-of-way management that is not only legal administratively, but also oriented towards order, security, and broad benefits of public space.

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