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THE CHALLENGES IN RURAL INFRASTRUCTURE PLANNING GOVERNANCE IN SARAWAK

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Abstract

Infrastructure development strategies remain an integral part of Malaysia's rural development policies and strategies. For the state of Sarawak, rural infrastructure development still remains a challenge. By using qualitative approach, relevant government agencies involved in the rural infrastructure planning process were interviewed to gather their insight on the current practice and the challenge that they faced when planning for rural infrastructure in Sarawak. This paper explores the challenges in the rural infrastructure planning practice which needs to be tackled to improve rural infrastructure delivery. The findings shows that location is a prime challenge in the rural infrastructure delivery. While in terms of governance, lack of funding and investments, lack of coordination between stakeholders, and issues in public resistance are recurring challenges. The discussion suggest that these challenges have to be taken into account and indicates that the integration of governance through policies and institutional roles needs to be emphasize in the rural infrastructure planning practice. The results of this paper intend to promote the importance of rural infrastructure planning that enables practitioners and academics to move forward to recommend a better framework for infrastructure planning in rural settlements.

Keyword: Infrastructure, Rural Infrastructure Planning, Rural Development, Governance

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INTRODUCTION

The development of infrastructure is an integral part of development of a region for productivity and growth (Calderón & Servén, 2004; Srinivasu & Rao, 2013; World Bank, 2019). Through several global commitments and targets, such as the Sustainable Development Goals (SDGs), New Urban Agenda (NUA) and the Paris Agreement on climate change, the role of infrastructure is becoming more widely recognised. Infrastructure is a main driver in 5 of the 17 SDG goals (SDGs 3, 6, 7, 9 and 11), while 121 of the 169 SDG targets is influenced either directly or indirectly by infrastructure development (Thacker et al., 2019; UN Habitat, 2018). Despite the importance of infrastructure in development, it is estimated that many worldwide still lacks accessibility to electricity, clean water, sanitation and about are not fully connected by proper roads (UN, 2016).

Often, it is mostly rural areas and their communities which faced this problem of inadequate basic infrastructure which causes income disparity and inequalities (World Bank, 2019) and affects the rural communities' quality of life (Calderón & Servén, 2004; Kaur & Kaur, 2018; Yusoff, Talib, & Pon, 2011). The disparity of infrastructure development remains a prevalent issue that requires attention when it comes to the level of infrastructure (Nedozi, Obasanmi, & Ighata, 2014; Songco, 2002; Srinivasu & Rao, 2013; World Bank, 2019) as rural communities will miss out certain services. Therefore, the importance of infrastructure has to be amplified in rural planning and development strategies and have specific actions to expand access to infrastructures in rural areas.

RESEARCH BACKGROUND

Malaysia as a developing country too faces the challenge of disparities in urban and rural development (Hoe, Wahab, Bakar, & Islam, 2017; Mohd, Azhar, Shakil, Senadjki, & Iran, 2018). Despite rapid pace of economic development in the last few decades and government initiated rural development policies and initiatives, development gaps still persist between the communities living in the urban and rural areas in particularly in the rural areas of the states in East Malaysia, Sabah and Sarawak which persistently have had lower coverage of rural infrastructure as compared to rural areas in Peninsular Malaysia (Arshad & Shamsudin, 1997; Ngah, 2009, 2011). The East Malaysian state of Sarawak continues to face the challenges in its development of rural areas. Issues of urban and rural disparities in Sarawak and pockets of rural settlements that still do not have access to basic infrastructure are problems that continues to be addressed in the Twelfth Malaysia Plan.

As of 2019, it is estimated that 40.6 % of Sarawak's population still live in rural areas (KPLB, 2019) making it the second state after Sabah with the most rural population among all the other states in Malaysia. According to the Ministry of Rural Development's Basic Data 2019, by taking the statistics in 2016, the incidence of poverty in rural areas of Sarawak stands at 1.1% compared to urban

areas which have only 0.3% (KPLB, 2019). This makes rural-urban income disparity in Sarawak still an important issue to be addressed. In 2019, the percentage of households with access to piped water at home was 86.4% while percentage of households in Sarawak with electricity supply was 99.8% (DOSM, 2019) which is relatively lower as compared to most of the states in Peninsular Malaysia which have already reached a coverage of 100%. The coverage of water and electric supply saw an increase by 0.4% and 0.2% respectively from the year period of 2016 to 2019 (DOSM, 2019) which shows that there have been improvement in the provision of water and electric supply to households, be it urban or rural, which can be attributed to the various policies that have been done by the Government. However, the statistics provided by DOSM may be questionable as on the ground, there are the pockets of areas in Sarawak which are mainly rural areas that lack the basic infrastructure of treated water and electricity and this problem still needs further attention.

Review on literatures found that most researchers stated that the factors for lower coverage of rural infrastructure in Sarawak is due to remote location of some of the settlements in remote areas with undulating topography which impose high cost for the provision of infrastructure (Gevelt, 2017; Khengwee et al., 2017). This presents a challenge to all stakeholders in the rural planning process to ensure the delivery of basic infrastructure to rural areas which is crucial to transform rural communities' livelihoods. For these reasons, this article aims to conduct a review on the infrastructure planning approach in rural development and planning practices in Sarawak to identify the challenges of rural infrastructure planning in the governance process in Sarawak. This article hopes that its findings can be built on to enable practitioners and academics to move forward to recommend and promote improvements in infrastructure planning in rural areas.

RESEARCH METHODOLOGY

The findings presented is from a study of rural infrastructure planning and development situation in Malaysia with the focus on the State of Sarawak (See Figure 1).

department were interviewed. Table 1 gives the details of the interview sessions and the participants.

Table 1: Details of the interview sessions and the participants

Interview Session	Ministry/ Agency	Number of respondents
Interview Session 1	Sarawak Economic Planning Unit (EPU)	8 officers
Interview Session 2	Ministry of Infrastructure and Port Development (MIPD)	2 officers from MIPD
	Sarawak Public Works Department (JKR).	2 officers from JKR Sarawak

Based on the collected data from the interview, ATLAS.ti qualitative data analysis software was used for data analysis of the topic themes and objectives. The analysis results are thematically organised from to enable analytical comparison of the opinions of the participating agency's representatives in the topic of the research. Additionally, this data was supported with policy documents and past literature. Based on the results from this analysis, different themes of infrastructure planning governance and process challenges is identified and presented. These results are presented in the discussion section of this paper.

RESULT AND FINDINGS

This section presents the results from the interview sessions. Firstly, we present some statistics on the improvements in basic infrastructure in Sarawak as acknowledged by the officers. Through these projects, there have been significant improvement in the coverage of basic utilities and services in rural areas throughout the Sarawak State. As shown in Figure 2, the rural electricity supply coverage in Sarawak has steadily increased from year 2016 to 2020. It is projected to reach a coverage of 97.0% in the year 2021. Similarly, the rural water supply coverage in Sarawak also have shown an increase as shown in Figure 3 from year 2019 to 2020.

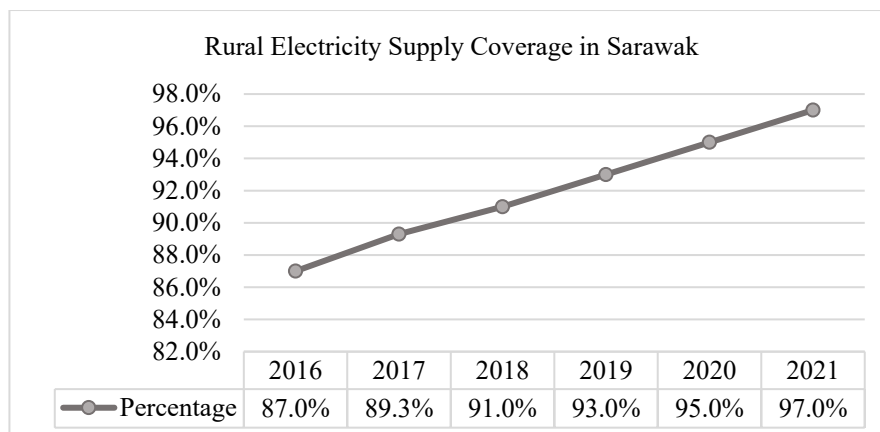


Figure 2: Rural Electricity Supply Coverage in Sarawak
 Source: Ministry of Utilities & Sarawak Energy, 2021

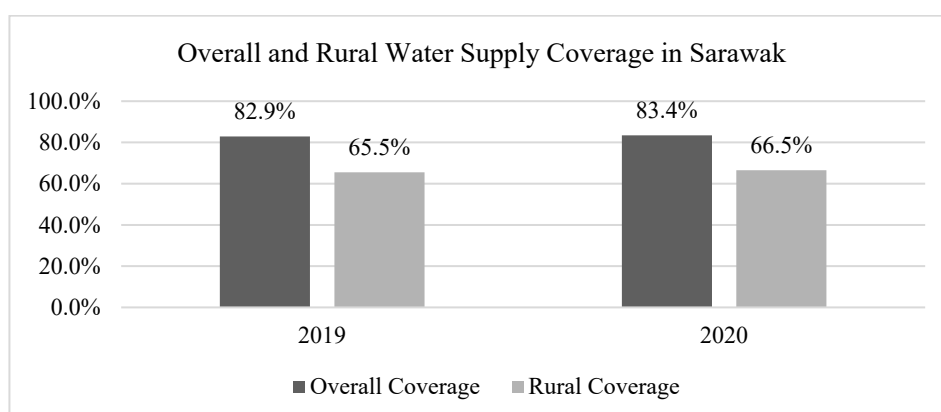


Figure 3: Overall and Rural Water Supply Coverage in Sarawak
 Source: Ministry of Utilities & Sarawak Energy, 2020

Under the 2021 State Budget, a total sum of RM1.273 billion was provided for the development of various roads and bridges at several rural areas (Jee, 2020). MIPD records that of 2019, Sarawak has a total road network of 31,780 km of which 1540km is Federal Road and 30,420km of various road categories under MARRIS (Malaysian Roads Record Inventory System). However, this statistic does not fully reflect the coverage of the road network throughout the rural areas in the State. Nevertheless, major road projects such as the Pan-Borneo Highway and Coastal Road are seen as important links connecting towns and rural settlements.

Table 2: Details of Sarawak Total Road Network Year 2019

Type of road	Road Category	Road Length (km)
Federal Road	Federal Road	1,540
Roads registered under MARRIS	State Roads	7,583
	Town Roads	5,797
	Kampung Roads	12,023
	Agriculture Roads	3,805
	Low-Cost Housing Roads	852
	Back Lanes Roads	180
Total Road Length		3, 0420

Source: Ministry of Infrastructure and Port Development Sarawak, 2021

While there has been improvement in the rural infrastructure, the findings from the interviews finds that the officers agree that development of infrastructure in rural areas in Sarawak remain a challenge. In this study, we were interested in the challenges of infrastructure planning in the rural areas in Sarawak. The discussion of findings from the interview identified four themes of challenges in the rural infrastructure planning governance and process. First is location factor, second is budget and investment, third is cooperation and implementation, and fourth is public resistance.

Location Factor

According to the officers interviewed, they agreed that the aspect of location is a significant challenge to be addressed. The officers expressed that due to Sarawak's vast and undulant geography, rural settlements are scattered around and located at various remote areas such as Lawas and Limbang divisions located at Northern region of Sarawak; and settlements areas at the Rajang River basin and coastal area of the Sarawak State. This factor influences many of the infrastructure projects in terms of technicality and feasibility. As an example, hinterland areas with rough terrain requires cutting and slope protection and expensive connecting infrastructures such as bridges, viaducts, and tunnels. These technicalities due to the geographical location are identified to add up to the expensive cost of rural infrastructure projects. As quoted, an officer explains the challenge of remote location to rural infrastructure delivery as follows:

... if you want to build the road for the settlement within the hinterland area but you don't have the main road going there or the access to that particular area, and we want to connect one settlement to another settlement in the hinterland, you don't have the major access to bring the materials in. Therefore, we use the alternative like logging road and plantation road.

Adding to this issue of locational factor, these rural settlements which are located at remote locations have relatively very low population. Due to this, several officers explain that they face problems to request for funds as they are unable to justify the cost of project for a low population. As quoted from an officer, he explained that, "...we cannot simply bring mega road projects costing us billions to the rural area where there are only few thousand population". Another officer provided example of the present situation where rural settlements near to Hydroelectric Power (HEP) dams are not connected to the electricity supply transmission line connecting as it will involve unfeasible budget top tap down the "last mile" of electricity. Therefore, implementing agency relies on different strategies to provide infrastructure such as through off-grid infrastructure.

For the most part, in dealing with the locational factor, the ministry and agencies talked about how funds are significantly lacking to ensure the technicalities due to remoteness of rural areas can be dealt with. Therefore, they argued that better understanding of the ground situation by ministries and agency officers and support from government at higher level could assist in securing funds to tackle the planning and delivery of infrastructure in undulant rural areas in Sarawak.

Budget and Investments

A recurring theme among the officers interviewed was the lack of budgets and fundings to implement rural infrastructure projects. Agencies often have limited financial resources to implement projects that have been planned under relevant policies and plans as they rely on fundings from higher government levels. The reason is due to the technicality involving location as mentioned earlier, in addition to rural infrastructure projects that were not as cost-effective or are unable to have significant returns in investment. This creates conflicts in justifying the procurement of budget for rural infrastructure projects in the budget approval process. Additionally, some officers criticised the delays in projects caused by contractors and developers which requires the agencies to revisit the budget which most often increases due to higher cost of materials and resources.

To solve budget allocation issues, the ministries and agencies have come up with various strategies to overcome this problem. Such as, the setting up of a trust fund under EPU for engineering feasibility study or, another strategy adopted by the ministries is to implement road projects in phases due to the limited funds under the development plans. Another part of the strategy to ensure funds for infrastructure development in rural areas, an officer explains that they have to rely on megaprojects to justify projects so that budgets can be justified. As one officer explains:

We use this strategy because when we are dealing with the private sector and the federal government: such as when we built the HEP dams, we are using these dams where the investment is being made, employment are going to be generated, and the socio-economic benefit and all that to justify the roads going to the hinterland area....With these major roads being justified with the existence of HEP, it can be easily connected to the individual settlement along the way rather than trying to justify the billions for one or two settlements. That is the strategy.

Undeniably, the ministries and agencies expressed that if more budget was allocated, the delivery of infrastructure to rural areas can be more effective. One officer suggests that there need to be look into new mechanism at how rural infrastructure projects can be prioritise through returns of investment so that it can fund subsequent future rural infrastructure projects. Additionally, officers also advised to have for better political will to secure budgets and investments to plan and develop rural infrastructure in Sarawak.

Cooperation and Implementation

Our data revealed that ministries and agencies have in part maintained a level of cooperation and coordination at the state level in the planning process. Although, our findings reveals that certain overlapping of roles do still occur between agencies. However, the officer clarified the agencies would work together to overcome the overlapping in their works.

On the other hand, our findings shows that there emerge some conflicts between the state level and federal level agencies whereby state level officers interviewed claimed that officers at the federal level do not have a clear understanding of the real ground situation and challenges in Sarawak which cause problems in securing budgets or funds for infrastructure development projects. However, some officers acknowledges that this issue is not due to lack of understanding but rather the rigid requirements in the approval process of budgets at the federal level which proof to be of a disadvantage to lesser developed state such as Sarawak where certain criteria are unjustifiable for rural areas. This challenge is reflected in the past experience of an officer involved in the development for the Batang Rajang Bridge to replace a ferry crossing.

To Federal EPU, they will be asking: can you justify the traffic volume? We say we cannot justify the volume. So, they say we cannot give you the money, a ferry is sufficient to cater. ...Maybe we don't blame those officers in federal. They have all these guidelines to justify the project, such as we must have the rate of return, the traffic and all these. So, we say all these things, with special consideration for Sabah and Sarawak is different... If we justify, we don't have any development here.

Some of the issues involving stakeholder is politically related. The findings of the interviews suggest debatable opinions on how political interference in the infrastructure planning process may make or break a project. One officer criticised past decision of the federal government to cancel certain rural infrastructure projects which were already in planning approval stage. An example given by an officer was the cancellation of the Batang Lupar Bridge project due to the change of Federal government in 2018. This creates delays in projects which affects the cost of project. However, on the contrary, another officer suggested that political influence may help advance a project such as the advancement of the development of Batang Rajang Bridge by persuading the Minister of Works at that time.

The officers interviewed have express their opinions on the role of private sectors who own large lands in the rural areas under provisional lease to conduct logging and plantation activities in the infrastructure planning process. Their role in rural development is well acknowledged by the ministries and agencies. However, the officers claimed there is lack of cooperation between these private sectors when the government wants to bring in new infrastructure to local communities such as cases where government agencies were barred from using the logging roads or charged by the private sector for using the plantation roads when delivering resources for infrastructure projects.

As a way forward, it is suggested that the government will have to cooperate and collaborate with private sector. The officers express that as some of the rural settlements are within the vicinity of the private sector operating them, the private sectors could have a more social approach in developing their lands where roads can be utilized collectively by the rural communities as a Corporate Social Responsibility (CSR) effort. In ensuring better rural infrastructure development, the respondents argue that they would need to be guided by clear guidelines while having certain exceptions to less developed states at the higher government levels to expedite financial resources for rural infrastructure development. Additionally, most of them emphasize the need to have a better working relationship with the federal level ministries and agencies and private sectors.

Public Resistance

It is noted that while generally a top-down planning approach through plans and policies, bottom-up efforts through engagements at the lower level of government: district and divisional levels and public engagement are also involved. The local communities are represented by their elected representatives. Officers acknowledge the role of the elected representatives as they know better the needs of the locals on the ground to propose the project to the relevant agencies or ministries within the allocation approved for them per year.

Therefore, localised data and opinion are captured utmost in the planning stage through public engagements before implementation of projects.

However, as acknowledge by several officers, this approach does not guarantee a smooth process for the implementing agencies. Implementing agency still faced problems with the public in terms of public resistance. Our findings reveal that land issues are a significant theme for the objection of local communities. It is gathered that rural residents are reluctant to allow development in the land as in some cases, their agricultural land may be taken and it has sentimental value to them and is their source of livelihood. For example, one officer said, “We have to acquire some land here and there and even some of the crop will be damage. When we acquire the land, they have a lot of sentimental value”. Another reason in addition to this is some communities may object to the compensation offered by the government as an officer explained,

There's is always that kind of issue coming up when one individual is probably not happy with the quantum of the compensation, or for example, with the land under the state law is recognize as his land.

Due to this, implementing agencies face challenges in convincing rural communities to develop their areas especially if the infrastructure project involves acquisition of communities' land. Nevertheless, implementing agency adopt a social approach in convincing local communities to accept infrastructure development project. One officer revealed that local communities became more acceptable to change after some time to previous rural infrastructure projects and reasoned that the perception of local communities to rural transformations takes time to understand and accepted. As quoted,

So, it is difficult to convince them (local communities). ...At that time, they don't appreciate it but now maybe with the new generation coming out from their hometown they appreciate the better roads. ... So maybe development takes time to get the people to accept it, to change the perception or maybe the younger people will come up to say it is better for the future.

Hence, public participation remains a challenge in order to effectively engage the locals as implementing agencies will require communities' inputs in understanding their needs and concerns when developing infrastructure for them. Officers view that a win-win situation needs to be achieve in the planning approach when the project affects the local communities' livelihood.

CONCLUSION

In a nutshell, this paper aims to understand the challenge being faced in rural infrastructure planning in Sarawak. However, it is noted that the investigation of

the views of officers would have some limitations where it cannot describe the views for all other related agencies in the rural infrastructure planning process. Nevertheless, the study is able to present a look into the challenges being faced in planning for rural infrastructure in Sarawak. This paper highlights the challenges in the governance aspect which needs to be tackled to improve rural infrastructure delivery. The recurring challenges faced by agencies and ministries are locational factor, lack of funding and investments, lack of coordination and cooperation between stakeholders, and public resistance. Hence, it is integral for collaboration and integration between all related stakeholders especially top-level governance, private sectors and community for rural infrastructure development. Therefore, this paper points towards a need for a more integrated process where the different stakeholders in the rural infrastructure planning process are able to build cooperation and coordination both at policy, planning and implementation levels of rural infrastructure development in a multidisciplinary way.

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