



Consensus as the Local Spatial Strategy: Understanding Stakeholders Dynamics and Pattern of Water Utilization at Kelingi Tugumulyo Irrigation Area

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ABSTRACT

Common practice of irrigation water in Indonesia often lead to the utilization of different approaches and strategies resulted in the conflicts' creation and resolution. Our take on irrigation water as common-pool resources brought us to the notion where conflicts could be mediated, and resolution would bring variegated interests and spatial strategy of our research object. Drawing from the case of irrigation water area at Kelingi Tugumulyo, Kabupaten Musi Rawas, we examine stakeholders' interactions which lead to the deployment of consensus and utilization patterns of irrigation water. Our findings from field observation and in-depth interviews employing purposive sampling methods reveal the fact where stakeholders' interests and consensus as the result of endogenous growth and exogenous aspects produce specific utilization patterns of irrigation water as common-pool resource.

Keywords: *consensus, food security, irrigation, stakeholders*

1. INTRODUCTION

The pattern of water use in irrigation areas often triggers different views and utilization strategies. As part of common-pool resources, water in irrigation areas is often used on the principle that anyone has the right to consume which leads to a mechanism for other users to be excluded from the process to consume these goods. On the other hand, water itself is a strategic resource whose utilization is regulated by the state for the maximum welfare of the community. This has implications for conditions in Indonesia where water as a shared property of its use is regulated by the government and the community is given the right to use the goods as long as it does not conflict with government regulations [1], [2], [3], [4]. Another view was put forward by Ostrom who stated that there was a relationship between spatial scale and the effectiveness of the capacity for managing shared property without involving the role of the government [5], [6], [7].

Based on the above thinking, common property is

defined as goods that can be used for the common good and have value benefits for each stakeholder involved. However, the value of these benefits is related to the perspective of each stakeholder that can affect the form of utilization and management of the shared property. Each stakeholder will be faced with the problem of personal interests and group or community benefits. Meanwhile, there is a thought that the benefits that are expected to arise from groups or common interests can be realized through cultural transmission in every decision [8]. Thus, in terms of existing theories or concepts, each stakeholder has an important role in the decision-making process. This important role appears in the form of providing information and the ability to maintain relations between stakeholders by the rights and authorities that must be carried out [9]. Relationships between stakeholders in the name of cooperation that only provide one-sided benefits can affect trust between stakeholders and hinder collaboration [10]. This requires the support of participation from the local community and strengthening the institutional management of the stakeholders involved [11].

As a representation of the shared property, water in the Kelingi Tugumulyo Irrigation Area which passes through Kabupaten Musi Rawas and Kota Lubuklinggau shows various forms and utilization strategies. Based on Permen PU No.14/M/2015, the Kelingi Tugumulyo Irrigation Area has a standard area of 10,163 hectares which is used to irrigate paddy fields. Along with the development over time, the use of irrigation area water began to appear as a problem among stakeholders that have been going on since 1998 [4].

In solving the problem of water use in irrigation areas, the government has facilitated stakeholders to save and optimize water in the Kelingi Tugumulyo Irrigation Area [12]. The dialogue resulted in a consensus on the use and management of irrigation water. However, the process of resolving the conflict still has not found results in maintaining its sustainability. Consensus cannot be formed because of a misunderstanding or incomplete information, an attempt to seek unilateral advantage, or an attempt to impose power on another party [13]. Thus, the consensus is often faced with problems of the power structure. The problem of the power structure does not occur if the consensus is still running and the sustainability of the common property is still available. Conceptually, the goal of consensus through government intervention or community or group intervention is to maintain the sustainability of water in the Kelingi Tugumulyo Irrigation Area for the common good. Based on this premise, this research is directed to photograph the following: (1) find the pattern of water use in irrigation areas and (2) find the factors that influence the pattern of water use in irrigation areas.

2. METHODS

This research approach uses an inductive approach with qualitative methods. The research location is in the Kelingi Tugumulyo Irrigation Area which covers the Musi Rawas Regency, namely Tugumulyo District, Purwodadi District, Sumber Harta District, Megang Sakti District, Middle Tribe District of Lakitan Ulu, and Muara Beliti District. The background for the selection of the research location is that the area of water use in the irrigation area is mostly used by the people of Musi Rawas Regency which is downstream with an area coverage of 8,841 hectares of the total standard area of 10,163 hectares and is a location for problems of mutual interest.

This study uses primary and secondary data. Primary data collection methods were obtained through *in-depth interviews* with open-ended questions and direct observation. to object studied at the location observation. Interviews with several selected sources using *purposive techniques* the *sampling* were carried out from September 2021 until February 2022 2.

While secondary data comes from document analysis in the form of documentation and archival documents.

Broadly speaking, this research examines the utilization of irrigation area water based on the perception of stakeholders involved in it. Based on this study, it was found the understanding of the stakeholders involved, the form of water use in the irrigation area, and the factors that influence it.

3. RESULTS AND DISCUSSION

3.1. Development of Forms of Irrigation Area Water Utilization

At the beginning of its construction in 1941, the use of water from the Kelingi Tugumulyo Irrigation Area was intended for rice farmers and was also used to meet the domestic needs of the surrounding community. They use the water from the irrigation area for washing, bathing, and defecating. However, in its development around the 1980s, irrigation water was also used for fishing activities. Most fish farming actors are entrepreneurs and public officials who have strong positions and positions in the government and a have large capital. Meanwhile, most of the rice farmers are from the lower middle class. However, there are also fish cultivators who were previously rice farmers who collaborated with large-scale fish cultivators in developing fishery activities.

The process of using water from the Kelingi Tugumulyo Irrigation Area tends to be used exploratively. Most of the use of irrigation area water is done illegally by damming or tapping. This is following the nature of *common-pool resources* which has a *non-excludability* or not high value but the item has enormous benefits for its users, but has competition in getting it (*rivalry*) [14]. This makes it difficult to limit other users in the use of the item (*exclusion*) and requires segregation or restriction of other users to take advantage of the item. so as not to cause conflict (*subtractability*) [15].

The diversity of pattern of water use in irrigation areas is motivated by the different perspectives of each stakeholder on water resources. The pattern of utilization of irrigation area water-related to agricultural activities used by rice farmers has the opinion that irrigation water is used as a fulfillment of the necessities of life. However, the use of irrigation water-related to fishery activities used by fish farming actors views irrigation water as a business opportunity. Meanwhile, people around irrigation canals who use irrigation water for domestic needs have a perception that irrigation water is social culture. This phenomenon has triggered conflicts in the use of irrigation water between rice farmers and fish cultivators. On the other hand, agricultural activities are the backbone of the

livelihoods of most people who use irrigation water, but fishery activities view irrigation water as a potential that can be developed as a profitable business opportunity.

Conflicts over water use in the Kelingi Tugumulyo Irrigation Area are also affected by the protracted process of water management in the irrigation area. The same pattern is found in the process of water management in irrigation areas so the same problems still arise. After

carrying out the construction of irrigation in 1941, the management continued regularly and periodically. Then from the development of the form of water use in irrigation areas and construction rehabilitation around the 1980s, a conflict over water use emerged in 1988. Subsequently, construction rehabilitation was carried out in 2012 and re-management. As shown in figure 1 as follows.

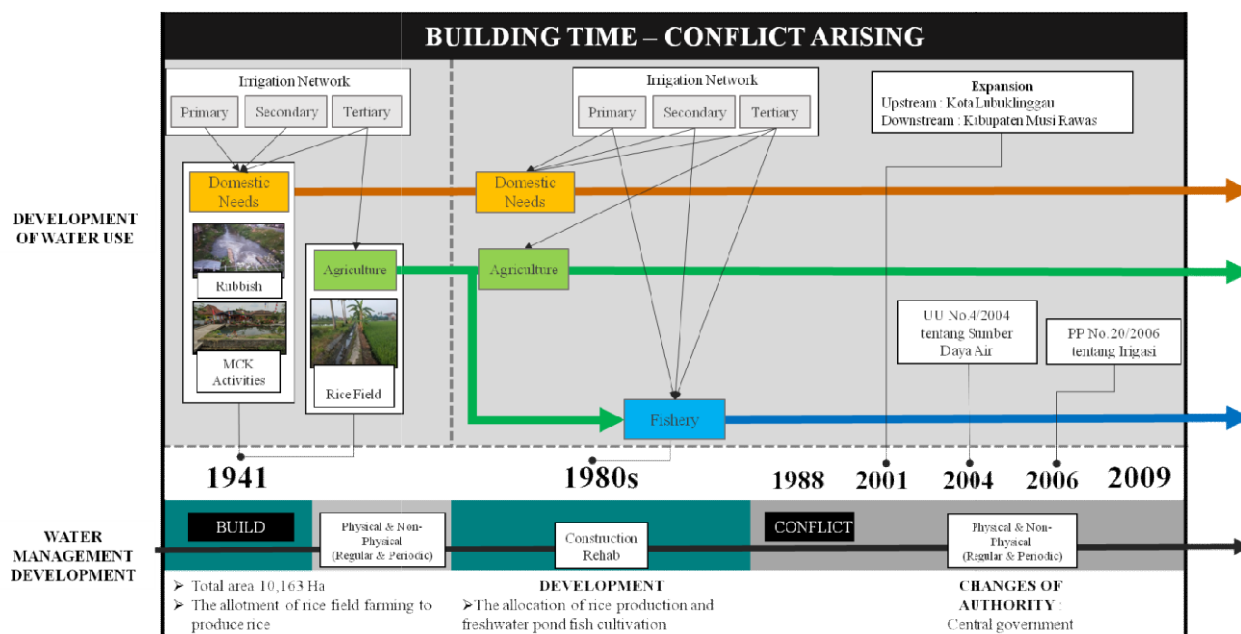


Figure 1 Development of Pattern and Conflict in Irrigation Area Water Utilization Period of Establishment Until Conflict Appears

However, conflicts over the use of water in irrigation areas still re-emerged, triggering an even bigger conflict in 2010. The implication is that the pattern of water management for irrigation areas that has been formed is to build and then ignore, then rebuild and then ignore, and so on. This shows that there is an inappropriate management pattern in the water management of the Kelingi Tugumulyo Irrigation Area. So conflicts over the use of irrigation water still occur, and the planning and organizing process does not work. As shown in figure 2 as follows.

The emergence of conflicts in the use of irrigation water causes consensus as a process to resolve conflicts between stakeholders. Consensus forms the variety and diversity of approaches to water management in irrigation areas and the management has influenced the diversity of forms of water use in irrigation areas. During the consensus period, the form of water utilization related area water, but must-have requirements for a water utilization permit and must restore the function of irrigation water entering aquaculture ponds must be returned to irrigation canals. For agricultural activities, a different management approach is also carried out through controlling water

use by restoring regulations for irrigation water intake, namely the use of water through tertiary canals managed by community groups using water.

The consensus period forms a series of activities to maintain the sustainability of irrigation area water use through a series of documentation activities through data collection and field surveys, asset management planning, organizing, and controlling the form of irrigation area water use. Documentation activities are carried out as an evaluation of the use and management of irrigation area water through data collection and field surveys to see a description of the condition out as inputs to improving the policy. Then proceed with planning activities, namely planning for irrigation network construction, planning for operational and maintenance manuals as a concept of water distribution and regulation, as well as planning for security disaster management to anticipate reoccurrence of conflicts. The establishment of the Irrigation Commission as an organizational process to facilitate coordination of planning implementation, and problems can result in stronger and more effective relationships between stakeholders.

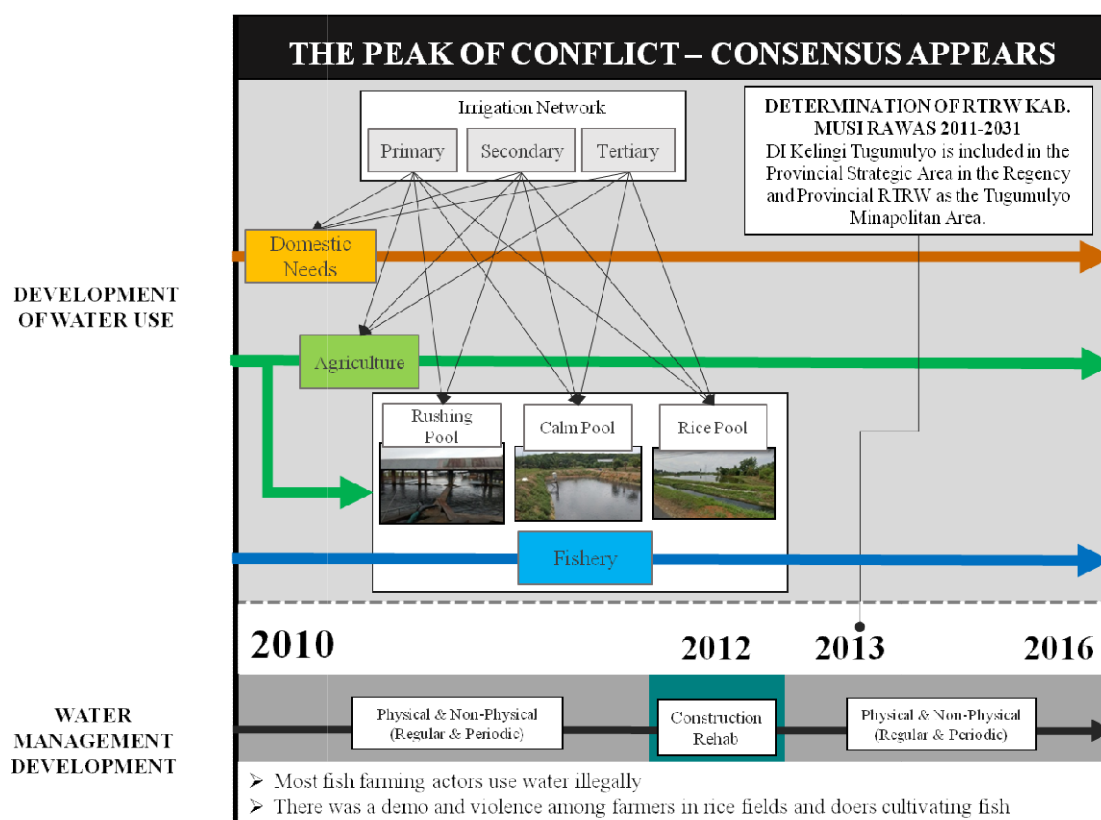


Figure 2 Pattern and Conflict of Water Utilization in Irrigation Areas The Peak Period of Conflict Until Consensus Appears

Meanwhile, control activities are carried out in the form of making regulations to protect land-use change, socializing water use control, and imposing sanctions on perpetrators who violate it. This series of activities is a series of activities not carried out before the consensus. In the conflict period, which is only in the process of implementation and control, a consensus forms a management cycle starting from the planning process followed by the process of organizing implementing and controlling [16]. As shown in figure 2 as follows.

3. 2. Factors Influencing the Form of Irrigation Area Water Utilization

Based on the development of the form of water utilization in the Kelingi Tugumulyo Irrigation Area, several factors were found that influenced the form of water use in the irrigation area which was conceptualized as internal factors and external factors.

3.2.1. Internal factors

Internal factors are conceptualized based on the stakeholders involved from the actors in the use of irrigation water and the parties responsible for management.

3.2.1.1. Water User Behavior Factors

The behavioral factor of water users is related to the behavior of stakeholders involved in the use of irrigation area water. The behavior of water users who tend to be explorative affects the sustainability of water which has an impact on the sustainability of the form of water use in irrigation areas.

3.2.1.2. Economic Opportunity Factor

The economic opportunity factor is related to business opportunity from finishing activities which are more promising than agricultural activities. Fishery activities do not require a large of land, it is enough to meet the requirements for water availability. This has triggered a change in the function of what was previously agricultural land.

3.2.1.3. Power Political Factor

Based on the RTRW document of Musi Rawas Regency in 2011-2031, the area covered by the Kelingi Tugumulyo Irrigation Area is included in the minapolitan area which is an area that supports fishing activities where most of the water for these activities comes from irrigation water. The determination of the area does not escape the political factor of power where fish farming actors are also public officials who have positions or have strong positions in government.

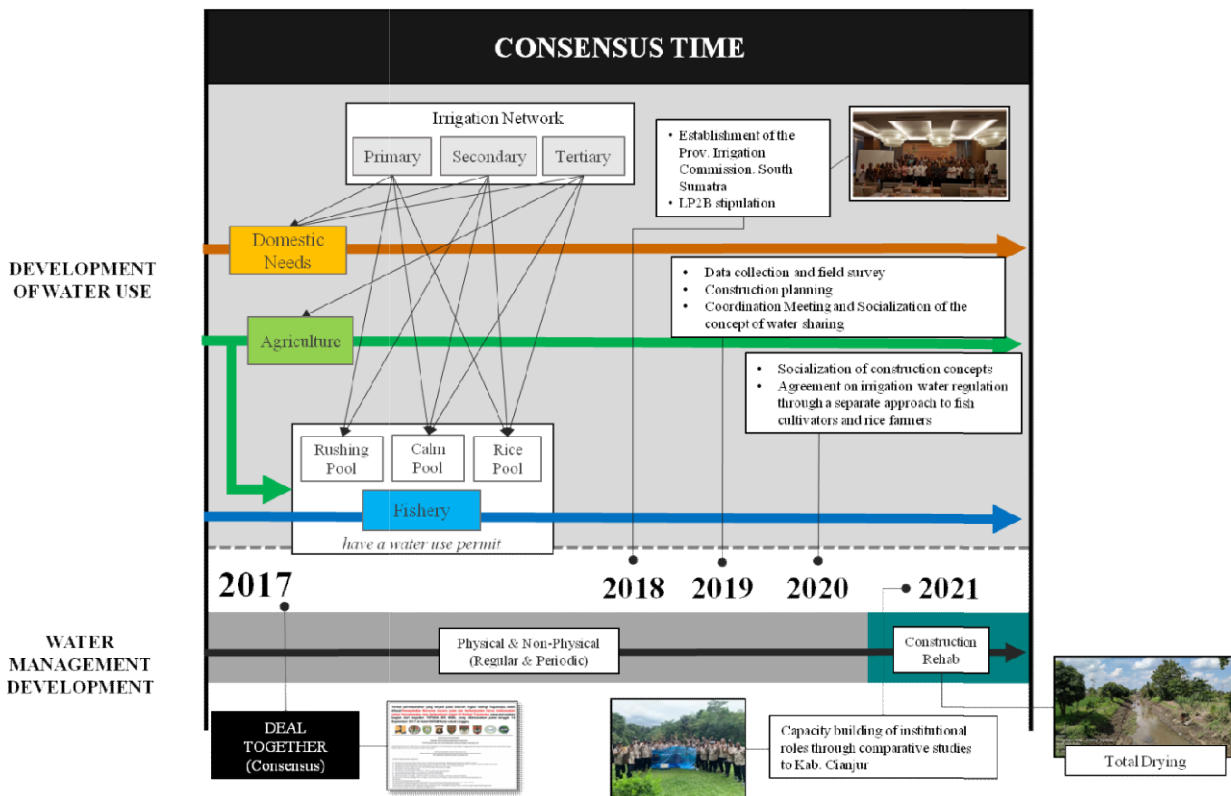


Figure 3 Development of Pattern and Consensus on Irrigation Area Water Utilization

3.2.1.4. Asset Management Factor

Asset management factor is the management of infrastructure, institutional, human resources, operations, maintenance, and security. This relates to actors using irrigation area water and those who are responsible for managing irrigation area water to maintain water sustainability which has an impact on the sustainability of the form of irrigation area water use. Asset management is carried out through government intervention in collaboration with groups or communities. Government interventions involved in asset management consist of the central government assisted by the provincial government and the Musi Rawas district government.

3.2.1.5. Leadership Factor

The leadership factor is the holder and director of every decision taken, especially in determining policies for the use and management of irrigation water.

3.2.1.6. Water Resources Property Rights Factor

The property rights factor is the right to get access to water resources. Most of the stakeholders who do not get certainty about water are due to not getting strategic access close to water sources. Meanwhile, stakeholders who have strategic locations close to water sources have the opportunity to get greater access but do not comply with predetermined regulations or are illegal. Stakeholders who should get the water right, but do not get the right, and vice versa.

3.2.1.7. Coordination Factors Between Stakeholders

The coordination factor determines the sustainability of the form of water use in the irrigation area. The phenomenon that often occurs is that coordination exists only under certain conditions, throwing responsibility for management within water management institutions and long bureaucracies causing coordination and communication to not be established.

3.2.1.8. Ecological Condition Factors

Ecologically, the carrying capacity of the land area of the Kelingi Tugumulyo Irrigation Area is a land that provides food crops for agricultural activities. This affects the sustainability of the form of water use in irrigation areas which can increase agricultural activities and control other activities other than agriculture.

3.2.1.9. Asset Management Documentation Factor

Evaluation activities through data collection and field surveys have been carried out as documentation factors that can affect the form of water use in irrigation areas. This activity resulted in an analysis of social, technical, economic, and institutional conditions as input for further planning.

3.2.1.10. Asset Management Planning Factors

Planning for irrigation network construction,

planning for water distribution and regulation, as well as planning for disaster management for security are categorized as planning factors for asset management. Planning determines stakeholders who have rights to water as control over the form of water use in irrigation areas.

3.2.1.11. Factors Controlling the Form of Utilization of Water Resources

Control is a form of effort to optimize the sustainability of water use in irrigation areas carried out by the government and those responsible for management by the agreed consensus. The government has carried out control through socialization to the public about the prohibition of water use other than agricultural activities to protect and maintain irrigation buildings and support irrigation channel management, socialization of water use permits, sanctions for perpetrators who violate, and making regulations to protect land conversion from activities other than for agricultural land.

3.2.2. External Factors

External factors are conceptualized based on the stakeholders involved from outside the actors in the use of irrigation water and the parties responsible for management.

3.2.2.1. Investor Factor

The investor factor is related to the form of utilization related to fishery activities as investors do not only come from the local community. Fish farming actors are entrepreneurs and public officials who invest by renting land or managing their land which was previously paddy fields. Moreover, fish cultivators also cooperate with feed companies outside the irrigation area to meet fish feed needs.

3.2.2.2. Funding Facilitation Factor

Asset management activities during the consensus period were different from the pre-consensus period, which was previously funded through local government budgets. However, during the consensus period, asset management activities were facilitated through funding from outside the government budget, namely from the *Asian Development Bank* (ADB), *ASEAN Infrastructure Fund* (AIF), and the *International Fund for Agricultural Development* (IFAD) through the government programs. The program facilitates funding to improve asset management but is engaged in agricultural activities. This will affect the sustainability of activities other than agriculture.

Based on the discussion above, the factors that influence the use of irrigation water in the pre-consensus period were different from the consensus period. Several factors did not appear in the use of

irrigation water before the consensus, namely ecological conditions, asset management documentation, asset management planning, controlling the form of water use, and funding facilitation. However, the most dominant factors based on factors that appear in each form of water use in the Kelingi Tugumulyo Irrigation Area are water user behavior factors and asset management. Each form of water use in irrigation areas has water user behavior that tends to be exploratory and the sustainability of water use depends on the asset management system.

The interaction between internal factors and external factors also raises the relationship between stakeholders between government agencies and community groups that participate in the use and management of irrigation area water. Community groups related to the use of irrigation area water for agricultural activities have a strong relationship with community groups related to the use of irrigation area water for fishery activities. Although in the use of irrigation water between rice farmers and fish cultivators, they have a relationship that needs each other. This is intertwined because of the same goal, namely improving the economy or business in fishery activities. However, a weak relationship is shown in the relationship between stakeholders involved in irrigation area water management and community groups related to the use of irrigation area water for fishery activities. This is due to the relationship of water management in irrigation areas that have not involved community groups related to fishery activities in irrigation institutions. Likewise, communication between government agencies and community groups regarding the use of irrigation water for fishery activities has not been established smoothly.

4. CONCLUSION

Our analysis illuminates determinants of utilization types of water irrigation in Kelingi Tugumulyo were shaped by stakeholders' perspectives and goals which gave rise to conflicts over the use of water. Moreover, the local government's ineffective asset management system leads to a widening rift between groups of water users, notably between those for farmland and fisheries. The lack of regional cooperation between Kabupaten Musi Rawas and Kota Lubuklinggau municipality lead to prolonged conflicts over the use of irrigation water.

We observe the pertinence of a good asset management system where put in place could minimize chances of conflicts despite actors' intent to maintain variegated uses of water irrigation in the study area. Although we found that consensus was reached, this was not a fixed state as it eventually

gave rise to another form of water conflict. Nevertheless, our findings exhibit the potential of consensus to produce a better development management cycle [16] that could be exploited to alter the utilization process of water irrigation. As such, we posit that consensus building can be deployed as a strategy to control resource utilization, especially water as common-pool resource.

Since our study only utilizes a single case study, we acknowledge the limitation of our findings. We propose to expand the number of observations allowing better observation and generalizability from the findings. We also recommend extending the regions observed as rural Indonesia is not one geographical unit due to different geographical characteristics and economic realities.

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