



Rural Water Governance : Governance Model for Fulfilling Rural Drinking Water Needs in Indonesia

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Abstract

Water Governance in meeting rural drinking water needs in the PAMSIMAS Program policy framework is strongly influenced by the project structure and mechanism from the central and local governments through Community Direct Assistance and Rural SPAM development grants. The researchers employed a post-positivist approach to analyze the policy direction of the governance model for meeting rural drinking water needs in Indonesia, after the end of the program in 2021 through Gieseke governance perspective and compared it with data from program implementation. Data collection was conducted through a literature review of secondary data in the form of journals, publications, and other relevant documents. Further on, data analysis was done through comparison between program data and the water governance framework according to Gieseke. Water Governance in meeting rural drinking water needs indicates a shift in the governance model based on an analysis of the style of governance and governance actors. Analysis of the literature review and data shows that the governance of community-based rural drinking water needs requires special arrangements for its institutional forms, ownership of facilities and infrastructure, technical management, and drinking water quality test. Meanwhile, the complexity of water governance results in a rural drinking water governance model trilemma. The trilemma faced by the Government in constructing a village governance model indirectly leads to Meta Governance model, which is capable of combining several governance models and raising a new situation.

Keywords: *Drinking water, Governance actor, Governance model, Governance styles, Village/rural*

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INTRODUCTION

Basic drinking water services around the world show failure in improving public health in a consistent manner (Valcourt et al., 2020). The sixth goal of the SDGs is to ensure the availability and sustainable management of clean water and sanitation. It is elaborated further in the 6.1 goal which is achieving universal and equal access to safe and affordable drinking water by 2030 (Bappenas, 2020).

Based on the study of household drinking water quality in Indonesia that was conducted back in 2020, access to safe drinking water reached 15.3% in urban areas, whereas it was only 8.3% in rural areas (Research and development center Ministry of Health, 2021). This indicates a gap in safe drinking water accessibility between urban and rural areas. However, in Indonesia, an archipelagic country with a total of 74,961 villages in 2021, the Drinking Water Quality Survey in 2020 shows that the type of drinking water facilities originating from unprotected springs are only 2.5% and those originating from protected springs are 4.2%. Meanwhile, 15.9% of drinking water facilities come from protected dug wells, 14.1% drilled wells, 3.8% unprotected dug wells, and 13.1% piped water (Research and development center Ministry of Health, 2021). This indicates that drinking water governance in Indonesia, especially for household consumption, generally relies on wells or pipes, which is not as easy as imagined in community-based governance. It is especially tricky in certain areas, for example in ensuring the sustainability and maintenance of assets owned and in operation. This opens a new perspective that the community-based drinking water supply system in Indonesia requires a governance from the

institutional, ownership, quality, and technical aspects.

The drinking water needs fulfillment is different from the clean water needs fulfillment. Drinking water is required to undergo a lab test to show that the source of drinking water is not contaminated with bacteria or able to cause disease, this is what leads the distinction of governance model for drinking water needs fulfillment.

As the leading sector, the government of Indonesia, through the Ministry of Public Works and Public Housing (Kementerian PUPR) encourages the governance of meeting rural drinking water needs through *Penyediaan Air Minum Dan Sanitasi Berbasis Masyarakat* (PAMSIMAS) or The Community-Based Drinking Water and Sanitation Provision. The PAMSIMAS program aims to increase the number of people in rural and peri-urban areas who have access to sustainable drinking water. The PAMSIMAS platform continuously implemented programs to increase access to safe drinking water in stages through PAMSIMAS I (2008-2012), PAMSIMAS II (2013-2015), and PAMSIMAS III (2016-2021). After the end of the PAMSIMAS program in 2021, it is necessary to follow up on various challenges in providing sustainable drinking water.

Community-based program, with community groups playing the management role, has the special characteristic of asset ownership by the community. It then has the potential to cause problem in the sustainability of asset maintenance and service financing. Such condition exhibit similarities to the PNPM Mandiri Pedesaan Program, which leaves asset problems after the program ended (Susilo, 2012).

Table 1. SPAM Program Performance Report

Planning Document		Financial administration			Asset list	
Present	Absent	Absent	Incomplete	Complete	Present	Absent
34348	741	2356	15011	17724	34432	659

Region	No. of villages	Data contents		SPAM management	
		Done	Not yet	Independent	BUMDes
National	35095	35095	0	33066	2016

Source: (Management Information System (MIS) PAMSIMAS, 2021)

After the end of the PAMSIMAS program in 2021, the constructed governance model underwent changes and adjustments from various aspects in the terms of the roles of the actors and governance style for meeting drinking water needs.

Based on the PAMSIMAS sustainability data in 2021, there exist several PAMSIMAS and SPAM management villages which require further guidance, due to incomplete financial administration in 15.011 SPAM and 659 without an asset list. Therefore, assistance is still needed for locations with problematic KPSAM management, even after the program has ended and is currently in the transitional phase.

This change process can be analyzed from the perspective and actions taken by the organizational actors involved, due to the need for adaptation to overcome various challenges that must be anticipated after the end of the program in terms of planning, regulation, technical operations, financing, and coordination.

METHODS

This study builds a rationale with a post positivist approach through literature review method. According to

(Creswell, 2018) the post positivist point of view refers to determination, reductionism, empirical observation and measurement, and theory verification. Policies to fulfill village drinking water access in the social, geographical, environmental, and economic contexts encourage dynamics and form various models, patterns, and results. This is the main factor that deems a literature review from various sources as a necessity.

This study utilizes a post positivist approach with descriptive qualitative methods. Data collection was conducted through a literature review of secondary data in the form of journals, publications, and official documents from related agencies. Secondary data in the form of national and international journals are published within the last 10 years, to ensure its relevancy in order to support data analysis. These works are complemented with secondary data, namely organizational data publications, reports, and other types of documents needed for the analysis. Data analysis was done by collecting secondary data, then mapping and comparing the theoretical framework with the results of secondary data analysis.

RESULTS AND DISCUSSION

Rural drinking water governance in the PAMSIMAS program analyzed based on governance styles and governance actors exhibits a hybrid governance model. Namely, the confluence of local community-based implementation and interventions and contributions from the central government, regional, and village governments in supporting the achievement of rural access to drinking water. Meuleman, as cited in (Gieseke, 2020), applied the Collaborative Governance Assessment Model (CGAM) in evaluating water governance. In this model, two components are assessed, which are governance style and governance actors.

Governance Styles

The structured management style of the PAMSIMAS program from the central to the regional governmental level, affects the coordination and interaction between KKM and KPSPAM as the technical SPAM manager. KKM and KPSPAM as community groups have limitations in the organization, administration, and management of SPAM, which cause gaps in governance. This shows the importance of analyzing policies of governance styles at the national level, where there needs to be a governance synchronization between the central, regional, and village government, in order to maintain management sustainability after the end of the PAMSIMAS program. Governance style, is divided into hierarchical governance, market governance, and network governance. Having a hierarchical governance style brings an advantage as it promotes stability and predictability, as well as upholding law and a clear chain of command (Meuleman & Niestroy, 2015). Market governance refers to mechanisms and notions related to the private sector, such as competition and provision of services (Alonso et al., 2015). From a functional standpoint, network governance aims to create a synergy between resources and competencies for solving a variety of complex, interrelated issues (Huppé, 2012).

			t
Communication Style	Giving information	Marketing	Organizing dialogue
Interaction Type	Informing	Negotiating	Debating
Output	Law	Product or service	Agreement

Source : Gieseke (2020)

Indonesia’s community-based drinking water provision program, PAMSIMAS, was initially hierarchical in nature. The formation of Central Project Management Units (CPMU) and Work Units at the regional level shows that it was teeming with elements of the traditional management structure, which is often used in government projects. However, as time went by and organizational capabilities reached their limits, The Ministry of Public Works and Housing started to involve its stakeholders in running the program. This move led to the rise of a hybrid organization on a national scale. According to the Directorate General of Regional Development, efforts to provide drinking water supply in rural areas are hampered by several obstacles, specifically from the planning, budgeting, regulatory, and coordinating aspects (Directorate General of Regional Development Ministry of Home Affairs, 2021);

- From the **planning aspect**, the biggest issue is that most rural areas have not yet set access to safe drinking water and sanitation as a local development goal. This condition is exacerbated with Sistem Informasi Pembangunan Daerah (SIPD) or the Local Development Information System not working optimally, resulting in very little data for local development plan evaluations. By December 2021, the amount of data received by the system had only reached 50% of the total data; that is, half of the 99

Table 2. Governance Styles

Dimension	Governance Style		
	Hierarchical	Market	Network
Orientation	Top-Down	Bottom-Up	Reciprocity
Role in Society	Ruler	Service Provider	Partner
Actor Perception	Subject	Client	Partner
Control through	Authority	Price	Trust
Strategize by	Planning	Entrepreneurial	Learning
Relationship	Dependent	Independent	Mutually dependent

regencies within the Regional II area (Directorate General of Regional Development Ministry of Home Affairs, 2021);

- From the **budgeting aspect**, local governments have not prioritized the development of drinking water and sanitation. This is based on the analysis results of the low allocation of the *Anggaran Pendapatan dan Belanja Daerah* (APBD) or Regional Revenue and Expenditure Budget on the development of the drinking water and sanitation sector.

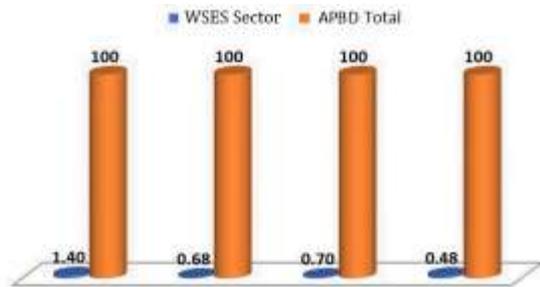


Figure 1. WSES Sector Budget Realization FY 2017 -2020

Source : (Management Information System (MIS) PAMSIMAS, 2021)

Based on the analysis results of the data above, it can be concluded that the national average of the increase in the APBD for the *Air Minum dan Penyehatan Lingkungan* (AMPL) or Drinking Water and Environmental Sanitation (WSES) sector is still very low, which is below 1%.

- From the **regulatory aspect**, the governance style of community-based SPAM has a variety of institutional forms and community groups with different conditions. The style of community-based governance approach has developed before the emergence of Law Number 6 Year 2014 concerning Villages, thus many details both in terms of authority and budgeting have not yet accommodated the matter of community-based SPAM

implementation sustainability in an optimal manner.

- From the **coordination aspect**, there are still overlaps and differences in the terms of program activities and even nomenclature, thus the government finds difficulty in analyzing regional system inputs, which results in the lack of basic data on policies for implementing rural SPAM at the regional level.

Governance Actors

In general, there are four types of governance actors. These four types are also adapted by public policy makers, private policy makers, public practitioners, and private practitioners in the context of meeting drinking water needs (Gieseke, 2020).

The public policy maker in Indonesia is the government. The role of the government is to determine the extent to which drinking water needs is mainstreamed in public policies and become a priority at the national, regional, and village governmental levels (Gieseke, 2020). At the village level, the Village Consultative Body is a form of village government institution capable of supervising and intervening with policy priorities and village government programs through village deliberations. At the regional level, the district government has the responsibility to mainstream universal access to drinking water in regional planning and budgeting, especially through the *Rencana Pembangunan Jangka Menengah Daerah* (RPJMD), or Regional Medium-Term Development Plan, which accommodates the Regional Action Plan (RAD) for Drinking Water and Environmental Sanitation (AMPL).

In order to realize the planning for the development of drinking water and sanitation nationally, the government's interaction forms patterns and limits on the extent to which public policy interventions can meet rural drinking

water needs. An example of the synchronization designs can be seen in Figure 3.



Figure 3. Synchronization of Water and Sanitation Development Planning

Source : (Directorate General of Regional Development Ministry of Home Affairs, 2021)

The governance actors in the illustration above have specific roles that determine the water governance model for meeting rural drinking water needs.

- BAPPENAS plays a role in improving the quality and synchronization of planning documents, by setting national priorities, indicators, and targets in the national development plan documents.
- The Ministry of Home Affairs plays a role in strengthening regulations for accelerating the fulfillment of Minimum Service Standards (SPM) for basic services in the Water and Sanitation sector. The Ministry of Home Affairs needs to encourage regional government to internalize support for achieving National Priorities and Ministries/Institutions Priorities in regional planning and budgeting.
- Local government must strengthen the role, commitment, and collaboration between stakeholders. Local governments need to internalize support for achieving national and institutional targets in regional planning and budgeting documents.
- Ministries/Partner Institutions are technical ministries directly involved in the development of drinking

water and sanitation such as the Ministry of Public Works and Public Housing (PUPR), the Ministry of Health, the Ministry of Villages and Development of Disadvantaged Regions and Transmigration, and other institutions.

Policy makers from private sectors have a highly recognized role and influence through company policies to maintain environmental sustainability and social responsibility to the community (Gieseke, 2020). The fulfillment of drinking water needs in Indonesia based on the Household Drinking Water Quality Study showed that 31.1% of drinking water was sourced from refilled water and 10.7% from branded bottled water (Research and development center Ministry of Health, 2021). This shows the big role of drinking water companies, both private and local, in ensuring access to proper drinking water and how companies need to be socially responsible to the community.

Public practitioners play a role in educating and providing technical assistance to the public, business people, and other private practitioners to achieve the goals of public policy makers (Gieseke, 2020). In Indonesia, government employees both at the central and regional levels as implementers of public policies are implementing agents who prepare various technical assistance and training. In the terms of fulfilling drinking water needs in Indonesia, these public practitioners are the actors who often interact directly with the service recipient community and field actors who understand the situation or conditions in the field. In the context of meeting the needs of drinking water and sanitation in Indonesia, public practitioners referred to here are technical agencies at the regional and village levels, namely regional apparatus organizations which provide technical guidance including the Public Works and Public Housing Service and the

Community and Village Empowerment Service (DPMD). After the end of the program, the PUPR service needs to build the capacity of SPAM managers at the village level so that they are able to manage and maintain the quality of SPAM in sustainable manner. Likewise, DPMD needs to provide guidance to village governments, specifically to encourage the planning and budgeting in order to meet local village-scale drinking water needs and encourage village governments to collaborate with non-governmental institutions and community groups.

Private practitioners are actors from sectors outside of the government who conduct their business activities and achieve certain goals such as entrepreneurs, traders, farmers, breeders, and other actors who are directly involved in providing consumer services or other groups. In the context of meeting rural drinking water needs, private actors have a key role in maintaining the sustainability of community-based governance SPAM that has been built on the PAMSIMAS program. For this reason, the sustainability of the role of technical implementing actors at the village level after the program ended determines the governance model needed in order to suit the community needs:

a. Self-sustaining Community (KKM)

- 1) Facilitate community aspirations through the work plan for the development of the village drinking water;
- 2) Encourage the development of financing from various sources of funds and develop cooperation; and
- 3) Coordinate implementing units to meet community drinking water needs and ensure that the implementation facilitates the needs of the vulnerable, disabled, and poor.

b. The Community-based Rural Drinking Water Supply and Sanitation (KPSPAMS)

- 1) Encourage the implementation of accountable governance of rural *Sistem Penyediaan Air Minum dan Sanitasi* (SPAMS) or Drinking Water Supply and Sanitation System.
- 2) Develop a work plan for the management of SPAM and encourage independence;
- 3) Encourage funding to optimize SPAMS.

c. KPSPAMS Association

- 1) Develop partnerships between KPSPAMS and local government and potential non-government partners;
- 2) Facilitate the provision of technical assistance to improve the performance of KPSPAMS governance;
- 3) Facilitate the exchange of information, data, and performance status of community-based SPAMS development so that they are able to be collected at the regional level;
- 4) Encourage the performance of KPSPAMS management through work plans and financing according to the work program

d. Private Drinking Water Company

- 1) Maintain environmental sustainability to ensure the village's water sources' quality and quantity.
- 2) Ensure innovation and development of appropriate technology that can encourage the development of village's drinking water.

Governance Model: Shifting has Already Happened

The shift of governance styles and the emergence of various roles of

governance actors lead to the governance model dilemma, with each style of governance emphasizing different methods in order to ensure the fulfillment of the expected results (Gieseke, 2020).

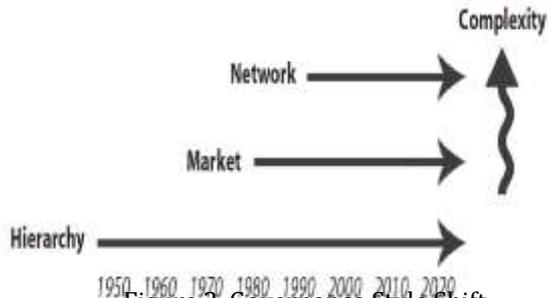


Figure 2. Governance Style Shift
Meuleman as cited in (Gieseke, 2020)

The trend of shifting from hierarchies and markets to the network style is seen with more reliance on horizontal governance than vertical hierarchies. Social values, environmental threats, resource scarcity, and individual mobilization in creating networks are the most influential external factors (Chaffin et al., 2014). The top-down hierarchical style has become less suitable and market governance is thought to be unable to represent all stakeholder (Roe, 2013). Flexibility and dynamism in network governance is seen as a suitable strategy to improve coordination and coherence in public policy (Christensen, 2011)

Gieseke views the importance of choosing a governance model by not only choosing one of the three governance styles but also by connecting the specific aspects of each governance style (Gieseke, 2020). The hierarchical style emphasizes the enforcement of laws and regulations, the market style emphasizes the gains and losses of the organization, while the network style relies on trust in the relationships that are built.

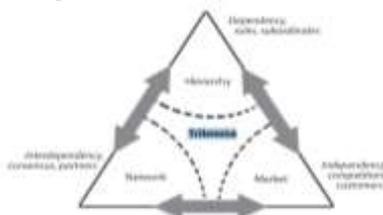


Figure 4. Illustration of Governance Trilemma
Meuleman as cited in (Gieseke, 2020)

Trilemma occurs as a result of the interaction between two organizations that apply different styles of governance and suppress other styles of governance. The trilemma in choosing a governance model for drinking water supply from the central, regional, village governmental levels in Indonesia occurs when the community as service recipients require social justice and inclusion (network), and at the same time require efficiency (markets) and security (hierarchy) (Gieseke, 2020). The current model for meeting the needs of drinking water in Indonesia is formed through the confluence of three governance styles. First, a community-based approach is applied as a governance style at the village level and forms a collaborative network in the implementation process. The urgency of choosing a community-based approach as the applied governance style includes: (a) The absence of a specialized institution to handle rural drinking water and sanitation governance; (b) Community involvement and participation in decision-making provides added value and greater impact; (c) Encouraging independence through community empowerment and capacity building; and (d) Opening up space for village communities to participate in the planning, building, maintaining, and implementing development in accordance with local resources and wisdom (Ministry of Villages Development of Disadvantaged Regions and Transmigration, 2021).

Second, the fulfillment of drinking water needs is a mandatory affair for basic services, which is the responsibility of the local government in an effort to fulfill the Minimum Service Standards (SPM). Thus, the village government is not directly responsible. The issuance of the Village Law strengthens the village's authority to participate in efforts to fulfill village-scale drinking water. Such participation is the

obligation of local authorities. It is important to encourage village government to participate and prioritize the fulfillment of village-scale drinking water in village planning and budgeting.

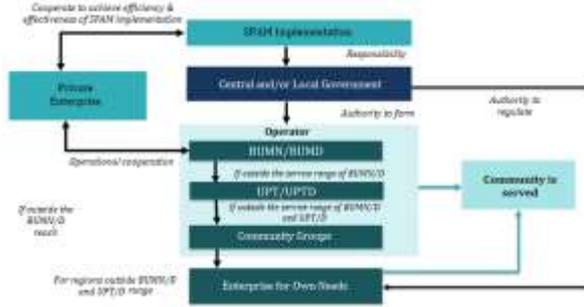


Figure 5. Implementation of SPAM according to Government Ordinance 122 Year 2015

Source: (Ministry of Villages Development of Disadvantaged Regions and Transmigration, 2021)

The implementation of SPAM is regulated by the government and/or regional government with BUMN/BUMD as implementing service providers. However, if there are areas that are unreachable by BUMN/BUMD or UPT/D, the village can support the fulfillment of village-scale drinking water needs through village-scale local authority by preparing RPJMDesa (Village Medium-Term Development Plan) and RKP Desa (Village Government Work Plan) through village forum and budgeting it into the APBDesa (Village Revenue and Expenditure Budget) document or through collaboration between the village and independent KPSPAM as SPAM managers from the PAMSIMAS program. The hierarchical management style is also characterized by strong government regulations and the dependence of SPAM organizers at the village level for financial assistance and physical development from the government because of the large costs required.

Third, the complexity of meeting rural drinking water needs also leaves problems in determining water tariffs in different regions, including the setting of upper and lower standards for drinking water provision carried out by KPSPAM.

Based on PAMSIMAS Management Information System (MIS) data, the number of KPSPAMs throughout Indonesia is 35,095 KPSPAMs with 33,066 KPSPAMs choosing to manage SPAM Mandiri and as many as 2016 KPSPAMs choosing to become or join as a unit in BUMDes (Management Information System (MIS) PAMSIMAS, 2021). From this data, approximately 94.2% of KPSPAMs are KPSPAMs that manage itself independently. Under these conditions, KPSPAM is an organization outside of the village government and follow market mechanisms in order to determine management and set the tariffs, or regulate drinking water services in general.

Jessop (2005) as cited in (Gieseke, 2020) defines the trilemma situation as a choice that must be made by forming a new combination of governance models as a solution to the problems. In contrast to the trilemma that arises as a result of conflict, Meta Governance views the possibility of mixing the three governance styles. Meta Governance is considered as a strategy to combine hierarchies, networks, and markets into a new model in certain situations (Meuleman & Niestroy, 2015).

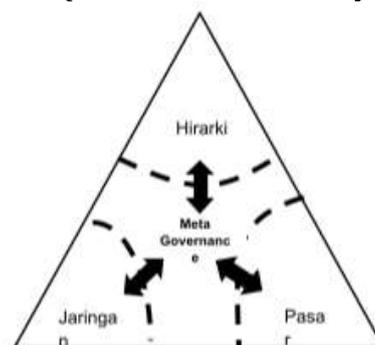


Figure 6. Illustration of Meta Governance
Source : (Meuleman & Niestroy, 2015)

Meta Governance is considered as a form of effective future solution based on a multiple approach by combining the three styles of governance, when choosing one of the three styles is not the solution (Gieseke, 2020).

CONCLUSION

The governance model for drinking water supply in Indonesia identified by the governance actors and governance style is facing a trilemma, and has the tendency to shift towards the Meta Governance model in the future.

The current governance style for meeting drinking water needs in Indonesia is the result of the confluence of three interactions, namely the project process which is based on the central to regional government hierarchy through the management of the PAMSIMAS secretariat, the technical implementation of community-based local village-scale SPAM, and the ability of regional government to intervene through budget allocation policies in order to fulfill the Minimum Service Standards (SPM) for Rural Drinking Water. Thus, the three governance styles are not integrated but implemented by each actor to achieve the same goal.

A hierarchical governance style is still needed in order to maintain a unified orientation and synchronized priority for drinking water programs from the central, regional, and village governmental level. Networks are needed to expand public facilities and infrastructure for access to drinking water in villages within all environmental, social, and economic limitations. Although the market (private sector) attempts to keep contributing to the public sector, the principles of efficiency and the calculation of the level of losses provide a clear line in providing maximum relief for the community on universal access to safe drinking water.

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