

## Community-Based Water Management: An Institutional Study In PAMDes Sumberagung, Bantul, DIY

By:

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### ABSTRACT

This study aimed to find out the patterns of institutional environments, institutional arrangement, institutional strategies, and policies on community-based water management in rural communities. This research object was Village Water Company (PAMDes) Sumber Agung located in Jalakan Hamlet, Triharjo Village, Pandak Sub-District, Bantul Regency, Special Region of Yogyakarta. Data collection was performed by using an interview to informant or reliable sources. By using Institutional Analysis and Development (IAD), data analysis technique was performed by analyzing the performance and structure of institutional arrangement. Participatory Rural Appraisal (PRA) was used to find out the process of empowerment and enhancement of community participation on community involvement of overall development activities. Our results indicated that the Jalakan community had a close relationship with the unwritten rules regarding the applicable rules, such as the *merti sendang* (clean the pool, embung, springs) or *padusan* (bathing before the coming of Ramadan).

**Keywords:** Institution, Rural Community, Community Water Management, PAMDes.

### ABSTRAK

*Penelitian ini bertujuan untuk mengetahui pola kelembagaan lingkungan, pengaturan kelembagaan, strategi kelembagaan, serta kebijakan tentang pengelolaan air berbasis pada masyarakat di daerah pedesaan. Objek penelitian ini adalah Perusahaan Daerah Air Minum (PAMDes) Sumber Agung yang berlokasi di Dusun Jalakan, Desa Triharjo, Kecamatan Pandak, Kabupaten Bantul, Daerah Istimewa Yogyakarta. Pengumpulan data dilakukan dengan wawancara kepada informan atau sumber yang dapat dipercaya. Dengan menggunakan Analisis Kelembagaan dan Pembangunan (IAD), teknik analisis data dilakukan dengan menganalisa kinerja dan struktur tata kelola kelembagaan. Tingkat keikutsertaan masyarakat di desa yang diukur dengan Participatory Rural Appraisal (PRA) digunakan untuk mengetahui proses pemberdayaan dan tingkat partisipasi masyarakat pada keseluruhan kegiatan pembangunan. Hasil penelitian kami menunjukkan bahwa masyarakat Dusun Jalakan memiliki hubungan yang erat dengan peraturan tidak tertulis mengenai aturan yang berlaku, seperti *merti sendang* (membersihkan kolam, embung dan mata air) atau *pancuran air* (mandi sebelum datangnya ramadhan).*

**Kata Kunci:** Kelembagaan, Masyarakat Pedesaan, Manajemen Air Masyarakat, PAMDes.

### INTRODUCTION

Life expectancy in developed nations have increased dramatically. It is largely because of universality access of clean water and rapid decline in infectious diseases (Frieden, 2010). Water is abundantly used both for productive and consumptive activities. Fishing, crop production, agricultural processing, livestock, recreation, and public health need the availability of water.

However, according to Namara *et al.* (2010) sometimes water is available but does not produce potential gain because people are unable to access this resources due to lack of infrastructural investment. In many cases, they who have limited access to water resources are poor people. As reported by WHO and UNICEF (2013) that by the end of 2011, 83% of the population without access to an improved drinking water lived in rural area.

Household access to clean water for safe drinking water rarely gets the government's attention. Bappenas reports that the proportion of households with sustainable access to safe drinking water in urban and rural areas is only 47.71 percent. This amount is not in accordance with Millenium Development Goals (MDGs) target of 68.87 percent. This means that more than half Indonesian population has not gained access to adequate and safe clean water. This is supported by the data obtained in Central Statistical Agency (BPS) data as shown in Table 1.

Table 1. Percentage of Indonesian Citizens Water Resources

Citizen Water Resources	Percentage
Tap water	10.93%
Ground water with pump	15.21%
Protected well water	22.58%
Unprotected well water	5.89%
Direct source of water (protected)	9,73%
Direct source of water (unprotected)	3.36%
Rainwater	2.53%
Big spring	1.98%
Other water sources	0.14%
Bottled water (ADK)	27.66%

Source: BPS (2013)

Study from Komarulzaman *et al.* (2017) suggest that improving sanitation coverage at the community levels is associated with low level diarrhea prevalence. Meanwhile Buttenheim (2008) examined the sanitation on child health in urban Bangladesh. He concluded that investment in sanitation improvement offer important externalities that is safe, hygienic environment and reducing diarrrheal diseases.

To manage water and meet clean water needs in rural areas, the Indonesian government make a policy through clean water program for low-income communities. The program is called Water and Sanitation for Low-Income Communities (WSLIC). This program is part of the implementation of clean water and sanitation sector performance in Indonesia. It is also based on the World Health Organization (WHO)-Unicef Joint Monitoring 2004 report, explaining that the quality and empowerment of communities in Indonesia in clean water and sanitation management sector is lower compared to other countries in Southeast Asia.

The government through several ministries, including the Ministry of National Development Planning (PPN)/The National Development Planning Agency (Bappenas), Ministry of Public Works, Ministry of Home Affairs, Ministry of Health, Ministry of Environment, Ministry of Finance, Ministry of Education and Culture, and Central Statistical Agency collaborate to launch a provision of clean water program for the community in rural areas. This service is conducted by forming a working group on Water Supply and Environmental Sanitation Working Group (POKJA AMPL).

Pokja AMPL was established to manage community-based water resources to meet clean water needs. This working group (Pokja) is run by empowering the community role, from planning to maintenance. Pokja AMPL has several programs, such as Community-Based Drinking Water Management (Pamsimas). This program is implemented by empowering the community. Pamsimas program is also one of the programs conducted by the government with the support of the World Bank, and implemented in rural and suburban areas.

One of the regencies that implement Drinking Water Supply System (SPAM) program is Bantul Regency located in the Special Region of Yogyakarta. Bantul Regency was chosen to be of the work

program for SPAM because the demand for water is very high, it is also supported by Bantul area which is difficult to access clean water. As cited from (Pikiran Rakyat, March 22, 2016 edition), the need for clean water and sanitation of many people in the DIY region, especially Bantul Regency area has not been met until 2015. Thus, the development of drinking water facilities through Community Based Drinking Water and Sanitation Provider II Program (Pansimas II) has been channeled to 18 villages. In 2016, Pansimas II program can be utilized by 16,977 people, or at least, the percentage of secure access to drinking water in Bantul Regency was 73.90% with the composition of piped water supply service of 23.5% and non-piped water supply service of 50.5%.

Based on data of Department of Public Works, Housing and Energy and Mineral Resources (PUP and ESDM) DIY 2012, Special Region of Yogyakarta (DIY) region had approximately 63,179 households spreading over 4 regencies and 1 municipality, namely Sleman, Gunungkidul, Bantul, Kulonprogo Regencies and Yogyakarta city, with a total of 464 PAMDes. In the development of PAMDes group, according to data of Department of Public Works, Housing and Energy and Mineral Resources (PUP and ESDM) of DIY in 2014, there were 817 PAMDes serving a total of 90,002 households for clean water distribution.

The objectives of this study are to find out, the environmental pattern of institutional communities in water management in rural communities, the aspect of institutional arrangement in community-based water management, and institutional strategies in community based water management.

## RESEARCH METHOD

This study is a qualitative research that uses case study approach. According to Rahmat (2009), case study is a research that explores a problem with detailed limitations, has a in-depth data collection and includes various information. Data collection in the form of primary data is taken from an interview to reliable sources or informants and through field observation, while secondary data are in the form of supporting data, such as PAMDes reports data, documentation, and data of Department of Public Works of DIY.

Institutional analysis is the part of social science that study how institutions behave and function according to existing rules (both formal and informal). Applying institutional theories to policy environment is not an easy way. It is matters of translating key concept of institutional theories into reliable and applicable strategies for observation (Basurto, 2010).

Our analysis look at how community manage shared resources, particularly water. Of course there are large diversity in solutions to this problem. A successful solution often adjusted with social and biophysical conditions. Therefore we need the appropriate framework to address this problem.

The study of institutions depends on three essentials foundations, there are theoretical frameworks, theories and models. 2009's Nobel Prize winner Elinor Ostrom developed institutional analysis based on theory of public choice known as IAD. IAD frameworks assign all relevant explanatory variables and categories and locate these categories within foundation structure of logical relationship (McGinnis, 2011). So as in Ostrom (2011), thus IAD is multi-tier conceptual map. IAD analysis recently used to examining social-ecological systems, used to analyze institutional resource management (Ostrom, 2011). We use the IAD frameworks in our study to analyze out the patterns of institutional environments, institutional arrangement, institutional strategies, and policies on community-based water management in rural communities.

Policy and institution analyses are used to evaluate formal institution related to regulation, authority procedures and resource allocation, while PRA is a method of approach in the process of empowerment and enhancement of community participation that emphasizes community involvement in overall development activities, both are used to analyze results of data obtained in the field, both primary and secondary data. PRA is an approach to encourage community to share their opinions and experiences that related to community problems or issues Abdullah *et al.* (2012). It is an effective tools according to Reddy *et al.* (2016), because enable the researcher to get first-hand information about community needs and problems, able them to identify researchable problems and

ultimately came up with tangible possible solutions. So, our research use PRA Analysis to identify the relationship between communities of Jalakan and the presence of PAMDes.

## RESULT AND DISCUSSION

### **Institutional Environment Pattern of Community Based Water Management of Jalakan Community**

Community development in meeting the needs of water in small-scale economic groups requires a social institution. This social institution is a set of norms existing in the scope of community (Nasdian, 2014). The community in Jalakan Hamlet, Triharjo, Bantul has the capital. In the environment, Jalakan communities have been able to meet the needs of drinking water facility and infrastructure independently.

Communities have an interest in community-based water management system. One of the basic interest is written, unwritten, bounded, or unbounded values that have been performed by the community. Likewise with the hamlet, the community of Jalakan hamlet have a very close relationship with various applied unwritten rules which is inherent in their life. For example, they hold *merti dusun* (a ceremony for hamlet/village), *merti sendang* (a ceremony for hamlet/village spring) conducted in the early month of Java calendar (1 Sura).

Social capital with mutual trust between communities is the capital of Jalakan Hamlet community in running community-based water management. For example, Harjono, 30 years old, a resident of Jalakan hamlet allows other people to take water in his well.

*“During dry season, many people (of Jalakan Hamlet) living in higher area went down to wash cloths in lower area or to take water from the well next to my house”.*

In the reciprocity side, the management of PAMDes Sumber Agung indirectly makes Jalakan community to work together (communal work) in repairing basin, installing pipes, and reservoirs. Communal work is one of the social capitals applying in rural community. The same thing is stated by Edi, 40 years old, whose house also uses PAMDes.

*“At the beginning of the pipe installation, all communities work together from the lower area to upper area because the pipe must be channeled to upper pipe. In my house, I installed the pipe from front of house to the backyard since the pipeline has been installed in front of my house channeled to upper area”.*

Social norms enacted in relation to community water management is reflected by their attitudes who never late to pay monthly fee, in every 10th of each month and always attend a meeting held by the management of PAMDes Sumber Agung. As told by Edi, 40 years old:

*“There is a regular monthly meeting on every 10th of each month to discuss monthly fee, if there is an installation of tools/pipes. As far as I know, no one is paying late because the cost is inexpensive”.*

Social norm does not only apply to Jalakan hamlet community, the management also has behavioral awareness to make no mistake in doing their work on matters concerning the management of PAMDes. As explained by Yuni, a secretary of PAB Sumber Agung related to PAMDes sanctions.

*“The sanctions imposed are light because many people from rural area do not graduate high school, some only graduated from elementary school. PAMDes will not work when they are depressed. The sanctions depend on the existing law in the community because we run the government regulation, so that everyone is willing to run PAMDes”.*

### **Aspect of Institutional Arrangement of Community-Based Water Management**

In water management, there are several aspects of critical institutions, the first is Jurisdiction Boundary. The concept of Jurisdiction Boundary limits the meaning of authority possessed by an agency in regulating resources generally based on hydrological boundaries, such as primary and secondary channels. As it has been known that water resources are comprised of several types, including surface water (river, lake, and water reservoir), ground water, and flood water.

Jurisdiction Boundary in water management is divided into three parts of work area in accordance with the Special Region of Yogyakarta Governor's Regulation No. 27 of 2015 concerning Raw Water Supply for Rural Drinking Water, which is (1) between *kelurahan/villages*, *kelurahan/village* or part of *kelurahan/village*, (2) between hamlets, hamlet and/or part of hamlet, (3) between RWs, RW and/or part of RW. As it is known that PAMDes Sumber Agung is a PAMDes whose management area is only in one hamlet. The work area boundaries include 2 villages with 6 RTs. Therefore, not all areas in Jalakan hamlet enjoy water from PAMDes, this is because Jalakan hamlet has different land contour. Most of Jalakan areas are in the hills.

The second is the Water Right which is the right of every individual (the community) to get water services in accordance with the obligation met. Water rights on this matter can reflect the rights obtained by the community in obtaining the required water with a certain amount and quality. While in the management system, there is the withdrawal of monthly retribution fee of at least IDR 8,000/month up to IDR 50,000/month performed by PAMDes Sumber Agung. Tariff payments are made according to the level of customer needs. In Jalakan Hamlet, not all houses are inhabited by one head of family. For example, Harjono's family, 30 years old, there are 4 heads of family in the house, so that the total water tariff to be paid is at least IDR 180,000/month up to IDR 300,000/month. In accordance with the rules of PAMDes Sumber Agung, every citizen who wants to access PAM water must pay a new tariff of IDR 380,000 for installation of new pipe with a usage fee of IDR 4,000. Previously, PAMDes Sumber Agung used the old tariff of IDR 150,000 for pipe installation with a usage fee of IDR 2,000.

The third is the Rules of Representative. It is an agreed rule with the aim of ensuring balance between the rights of water service obtained with the obligation met. PAMDes Sumber Agung is one of the community based institutions, its implementation follows the rural community system. Rural communities will have real authority and responsibility for managing the institution according to their culture. The community of Jalakan Hamlet in accessing clean water do not get any sanction when they violate the existing agreement because they will not get what they want when the sanctions are applied. As stated by Yuni, a secretary of PAMDes Sumber Agung:

*"The agreement says the rule violators must compensate for the losses incurred, but there is no details about the fine to be paid. Thus, the sanctions have never been applied. There are people who break the rules for 3-4 times, but it is not possible to replace them due to the small number of community members. Our action only gives warning letter per month to the violators."*

### **Institutional Strategy in Community Water Management**

Institutional strategy applied to community water management can be through an approach that leads to community or community development. Community approach begins with a discussion process at the level of small groups. Given the large number of PAB Sumber Agung customers, this can minimize any disturbance found in each individual. Community optimization by managing important information, considering that they are a group with an active participation, the information is managed by the community as a learning process in the development of PAB Sumber Agung. By providing experience to community in solving problems related to community water management, it is expected that the community of Jalakan Hamlet will provide solutions when they have obstacles. The implementation of community development strategies is intended to foster self-reliance and community participation to be more active as an individual, small group, large group or community.

Broadening a wider network is collaborative by involving various parties from their own community, stakeholder (relevant government, academics/universities, NGOs, or agencies involved in

rural community development. As described by Nasdian (2014), building community-based social networking is started from institutional strengthening and each network is capable of building equality. With the rule in accordance with the community, it will not harm the community.

## CONCLUSION

The pattern of Jalakan community institution can accept a change aimed to make self-sufficient and empower the community. There were mutual cooperation, mutual trust and kind relationship in building drinking water infrastructure. However, public awareness in terms of conservation of water resources was very low. This was evidenced by the lack of community ability to maintain or conserve water resources. In the arrangement aspect, the community of Jalakan hamlet gained their rights and their obligation as users of water resources has been met. Jalakan community was more active in participating in small group and was able to adapt according to institutional change.

The use of institutional strategies was pursued for a deeper and more comprehensive community approach to strengthen small groups within the community in the hope of minimizing disturbances found in each individual, optimizing community as a part of important information provides experience to the community in solving community water issues, broadening a collaborative network by involving various parties to engage in community development. The suggestion is to consider the reinforcement of individuals in active participation and broader information about the importance of conservation in water resources management.

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