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Sustainability of Community-Based Drinking Water Service System in Sukadana Village and Ababi Village, Karangasem Regency

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KEYWORDS

Community based drinking wate sustainability, human capital, sc capital, institutions

ABSTRACT

Water is one of the basic needs that must be met by all human be In fulfilling this, the government's participation plays a very impo role, limited fund management is a scourge that is feared by government so that the coverage of community-based drinking w services with independent management from the community is the step in overcoming the current achievement of access to drir water. However, in its development the SPAM system built experienced different developments. This study aims to determin sustainability of community-based drinking water service systen looking at the supporting factors for the sustainability of commu based drinking water services. This study uses a qualitative me which uses a case study method. The research design used a hc multi-case study using two research villages, namely Sukadana Vi and Ababi Village. From the research results it can be seen community-based drinking water supply has different level sustainability. Villages that have a level of sustainability from se aspects such as social, economic, institutional aspects make it pos to have more excellent service continuity compared to villages only have one important aspect. This is because each aspect h relationship between one another. The sustainability of commu based drinking water services is strongly influenced by social, hu and institutional capital. Community trust in managers, commitn and rules that have been agreed upon are one of the things support the sustainability of community-based drinking water serv

INTRODUCTION

Water is the source of life, where water is one component that has an important role in improving the standard of living of the community and the environment. Meeting water needs is a priority that has been continuously developed by UN member states since September 2009 with the establishment of the Millennium Development Goals (MDGs) declaration. Starting in 2015 this agenda was replaced with Sustainable Development Goals (SDGs), where one of the objectives of this agenda is to ensure access to adequate water and sanitation for all communities. The State of Indonesia as one of the participating countries in the agenda places this goal as one of the priorities for providing basic services contained in national development. Indonesia targets in the 2015-2019 RPJMN, that by the end of 2019 the coverage of decent drinking water services for all Indonesian people reaches 100% (Universal Acess).

The achievement of drinking water targets in Indonesia has many obstacles and challenges in realizing the coverage of drinking water services for all communities. According to the Minister of Public Works and Public Housing in the Side Event Sanitation and Water for ALL (SWA): Justice Begins Here-With Accountability in New York, United States, stated that, the coverage of drinking water services in

Indonesia currently reaches 91.05 percent of the target of 100 percent by 2024, (Kompas, March 27, 2023). To accelerate the coverage of clean water services in the community, the government launched various drinking water programs, one of which is the Community-Based Drinking Water Supply Program (PAMSIMAS). As a community-based drinking water platform where the community is included in every stage of the activities carried out. Community involvement in creating drinking water services has better service effectiveness and sustainability. Management of facilities and infrastructure that involves the user community in making decisions and institutions is able to generate a greater level of participation in all aspects of activities at the implementation, operation and maintenance stages. The sustainability of drinking water in the context of drinking water and environmental health can be interpreted as efforts made to be able to provide benefits and services continuously, (National Development Planning Agency, 2003). According to , a water supply system is said to be sustainable when the system is functioning and usable, the system is able to provide the appropriate level of benefits (quality, quantity, continuity, willingness, efficiency, equality, reliability, and health) running within a period adjusted to economic life without adversely affecting the environment, all operational and maintenance costs are met, there are institutions that manage and receive proper support from outsiders (Sastavyana, 2010)(CHAERUNNISSA, 2015; Nugroho & Maryono, 2016; Setyaningtyas, 2022)(Swastomo & Iskandar, 2020)(Kamulyan, 2018; Wadu, Gultom, & Pantus, 2020)

Pamsimas as one of the drinking water supply programs that involves community participation to meet basic needs, which are not served by public system services, especially for rural communities. Drinking water management managed directly by the community requires characteristics, institutional conditions and social capital to be an important factor in determining the success of the program. According to (Abidin, Zechariah, & Endaryanto, 2021; Trijunianto, 2016), mentioning that the management capacity entrusted in the community in an area is largely determined by local institutions that manage in this case human resources and social capital factors. There are three main elements of social capital, namely trusting relationships, norms and networks. While human capital according to Mayo in there are five components, namely: individual capability, individual motivation, the organic climate, workgroup effectiviness and leadership. (Kamulyan, Wiguna, & Slamet, 2018a)(Masduqi, Endah, & Soedjono, 2008)

Several studies show that social capital and the role of institutions in showing positive things to the sustainability of drinking water services. Andito Sidiq, et al (2020), said that the sustainability of drinking water managed by the community is strongly influenced by social capital, community and good management institutions and collaborating together to create excellent drinking water services. stated that the sustainability of drinking water services is strongly influenced by community institutions and institutional exploration in an effort to create a more excellent drinking water service order. (Kamulyan, Wiguna, & Slamet, 2018b)(Alfiah, Ari, & Hariyani, 2017; Munawaroh, Suyanto, & Masrukin, 2020)

According to online news and based on management information system (SIM) data, the Pamsimas program shows that as many as 10.4 million Indonesians have access to drinking water and proper sanitation, where more than 12,000 villages/kelurahan spread across 233 regencies/cities in 32 provinces in Indonesia. This access to drinking water cannot be separated from the participation of the community to continue to provide drinking water services that are managed independently by the community, so that village SPAM continues to operate optimally. However, in its development there are several areas whose management has not received good results, where there is SPAM that functions partially or not at all. (Afandi, Sunoko, & Kismartini, 2014; Amalia, 2019)

Based on this background, it can be seen that there are differences in the development of SPAM that has been built through the Pamsimas Program. Research on the management of village drinking water supply that has been operating is still very minimal, so it is considered necessary to know how the sustainability of community-based drinking water supply after facilities and infrastructure are built and what factors can affect the sustainability of drinking water managed by the community.

METHOD

This research uses qualitative research using the case study method, according to Yin (2002), stating that to determine the strategy developed in an effort to get a research question related to how and why, a good approach is used is a case study. This is done so that the author can have the

opportunity to know the events to be researched in an effort to see the phenomena that occur today. This approach is used by researchers in an effort to see the results and sustainability of rural drinking water facilities and infrastructure built by the government as a whole. Another thing needed by researchers is to see the phenomena that occur and be able to describe in detail related to the development process of the village drinking water supply system (SPAM). This research design uses research with a holistic multi-case design using two cases. The two cases used are to compare similarities or differences, so that in this study researchers can know clearly about the sustainability of community-based clean water supply systems in rural areas, and know clearly what factors cause differences in the two cases. The location of this research was carried out in Karangasem Regency, namely Sukadana Village and Ababi Village. The consideration in choosing this village is due to the construction of drinking water facilities that have been completed (Pamsimas III) and the infrastructure that has been built has been operating and serving the community. The data source was obtained from in-depth interviews with resource persons who participated in community-based drinking water supply management activities, consisting of village officials, village SPAM managers, user communities, community assistants (facilitators) of the Pamsimas program. Jam interview method also uses observation method where researchers go directly to the field to see firsthand the condition of management and facilities built.

RESULTS AND DISCUSSION

1. Sustainability of Community-Based Drinking Water Facilities

After the end of the Pamsimas III program in 2019 and the infrastructure of drinking water facilities has been handed over and utilized by the community, the sustainability of drinking water services in Sukadana Village is currently experiencing many improvements. Sukadana village, which was once known to be very difficult to get water sources, is now through the Pamsimas program, Sukadana village uses borehole facilities to be able to provide water services to the community. Sukadana Village consists of 7 (seven) banjars with banjars integrated by the pamsimas program as many as 3 (three) banjars with household coverage of 515 households already served with drinking water. Areas that have not been served by drinking water at this time, in 2022 receive pipan assistance whose funds are sourced from village funds, the development of drinking water service coverage in Sukadana village is a priority scale of the village government with the hope that all Sukadana communities will be served water equally. Currently, the coverage of drinking water services in Sukadana Village has reached 515 SR. Excellent drinking water services today cannot be separated from the active participation of the community to participate together from the beginning of planning to the management stage. According to the village apparatus, Sukadana said that the community jointly took part in the development of drinking water in their village with the participation of the community to jointly carry out mutual assistance in an effort to speed up the process of implementing activities. Another participation carried out by the community is the high level of public awareness to pay dues on time, dues paid by the community are carried out by consensus deliberation to be able to determine the contribution rates that can be paid by the community. The community pays monthly fees based on the amount of usage (per m3), where the price range paid is a load fee of Rp. 10,000, a progressive cost of water use of 1-10 m3 = Rp. 5,000,-, 11-20 m3 = Rp. 10,000, - and > 20 m3 = 15,000,-. Community members feel they must be responsible for paying for water in accordance with the time set by the manager in an effort to continue operating properly and cover the costs of operating and maintaining the built SPAM. In supporting water quality in the community, managers routinely carry out water quality checks in accordance with health standards imposed by the Ministry of Health, managers of drinking water institutions will coordinate with sanitarians in taking water staples which will later be tested for water quality to the District Health office. Post-construction drinking water management in Sukadana Village is carried out by KPSPAMS Sukadana Village under BUMdesa. The performance of KPSPAMS managers is very good where the manager already has an office to facilitate coordination between the manager and the community. Currently, managers in Sukadana Village also apply rules to customers both rights and obligations received so that in its implementation the community and managers can synergize in building better drinking water services.

Since the completion of the construction of drinking water facilities infrastructure built in Ababi village in 2020, according to observations and interviews conducted, the use of drinking water facilities in Ababai village has not increased the number of users. Currently, the number of beneficiaries in Ababi Village amounts to 45 SR and has not increased until now. The drinking water system used using mill technology, which in its maintenance requires very heavy effort, with the condition of the facilities in the river becomes risky in the event of a flash flood that can disrupt service coverage and reliable technicians are needed to be able to repair it. Community participation to pay dues is also quite low, because most people still have the assumption that using a mill means that there are no costs to be incurred such as purchasing fuel or electricity. Community residents rely more on assistance from the government or other parties, assistance through ABRI entered the village in 2021 with assistance provided in the form of Hydra pumps, but until now the service coverage has not increased. The institution that manages drinking water facilities in Ababi village currently still exists but does not play an active role. At the beginning of the operation, the water management institution was running well, but over time it declined more due to poor management, synergy between the village government and the institution and the lack of community responsibility to participate in jointly advancing and creating excellent drinking water services in the community.

2. Comparative Analysis of Community-Based Drinking Water Studies

To find out the aspects of community-based drinking water sustainability, it is grouped from the results of the description needed, this aims to get comprehensive research. A comparison of the sustainability of drinking water services at two sites is shown in table 1.

Table 1 Comparison of the development of drinking water sustainability in each location

	Desa Sukadana	Desa Ababi
Aspek Sosial		
Akses Layanan Air Minum	Berkembang	Tidak Berkembang
Partisipasi Masyarakat	Tinggi	cukup
Aspek Ekonomi		
Kesadaran masyarakat untuk membayar iuran	Tinggi	rendah
Biaya Operasional dan pemeliharaan	BOP< Jumlah Iuran	BOP > jumlah Iuran
Aspek Lingkungan		
Kualitas Air	Baik	Cukup
Kuantitas Air	Cukup	Cukup
perlindungan sumber air	Ada	Ada
Aspek Kelembagaan		
Lembaga Pengelola	Ada dan Aktif	Ada dan tidak aktif

From table 1 can be seen the differences between the two villages used as research locations. Where there are some differences in development after the infrastructure is handed over and managed by the community. The sustainability of drinking water services in Sukadana Village has experienced sustainability while in Ababi Village has not increased.

In Sukadana village, from the social aspect, service access is growing, this is seen from the coverage of drinking water services in the community has increased from the number of available house connections, besides that the participation of the sanpai community is currently still maintained and

contributes significantly to the development of service coverage in Sukadana Village, community contribution and participation is shown by frequent mutual cooperation activities, Donations of tools and money, another thing that the community does is to be proactive if there is damage, the community together with the manager to repair if there is damage for example there is a leaked or damaged network. Different conditions occur in Ababi village where access to drinking water services is not experiencing development and community participation is still low with an indifferent attitude from the community that water security is the responsibility of the government or managers only.

Viewed from the economic aspect, in Sukadana village high public awareness to pay dues every month is a form of community responsibility which can be used as operational and maintenance costs and can even be used for network development so that all communities in each banjar in Sukadana village, especially for areas with high terrain can enjoy smoother water access without having to alternate between residents with one another. Unlike the case in Ababi Village, people still assume that water is a free natural resource so that people do not want to pay dues that have been charged to the user community. Low public awareness to pay for water makes operational and maintenance costs nothing, which of course affects the sustainability of drinking water services in the community.

Environmental aspects are one of the important things, because maintaining water quality will affect the degree of public health. In Sukadana Village the water quality is good and in accordance with the Ministry of Health while the quantity of water needs to get better management, because Sukadana village uses boreholes that are very dependent on climate, so that in the dry season people in Sukadana village have difficulty in fulfilling water. Unlike Ababi village where infrastructure is built using a mill with surface water (river) which when viewed in terms of quality is still quite low, another thing is the absence of protection of water sources that can interfere with the quality of water to be used by the community.

The institutional aspect is one aspect that plays a role in regulating the water system in the community both from a technical and administrative perspective. In Sukadana Village, the existence of the institution has full support from the community so that all rules and sanctions imposed on community members are truly obeyed and understood by the community. Unlike the conditions in Ababi village, institutions still exist but are experiencing a vacuum because the built infrastructure is not operating.

3. Social Capital for the Sustainability of Drinking Water Services

Social relations play a very important role for the sustainability of water services in the community. The synergy of the community and the manager is still maintained, damages such as leakage of water connections will be very quickly informed to the manager by the community, otherwise the manager will respond quickly to community complaints, this causes high public trust in the manager of Sukadana village. Different conditions are experienced by Ababi Village where community participation is not the same at the planning stage, the decrease in community participation is caused by lack of community trust in the performance of managers so that water sustainability in the community has problems. The rules that have been made and agreed upon in Sukadana village are actually carried out by the community and managers while in Ababi Village the rules are not applied in real life in the community.

4. Institutions for the Sustainability of Drinking Water Services

The potential of human resources in each research location is almost the same seen from the level of education and community income. Their joint commitment is to get water with quality, quantity, continuity and affordability at a price that can still be paid by the community. After the SPAM infrastructure was completed and the management was handed over to the community with the extension of the Drinking Water Facilities Management Group (KPSPAMS), in Sukadana village the level of community participation increased. Increasing community participation is based on the ability of the institution, in this case KPSPAMS, to be able to manage water so that the community evenly gets water. Another thing that is ensured is the participation of the village government in an effort to provide piping assistance to KPSPAMS to further improve and expand service networks in the community, increase the capacity of KPSPAMS with trainings that can help KPSPAMS if there is damage to SPAM built so that the flow of water does not experience disruption for a long period of time. Different conditions occur In Ababi Village, the lack of management commitment caused by the lack of community participation is the root of the problem that must be resolved, besides that the intervention of the village government

to provide education to the community regarding the level of awareness is still quite minimal, this is an obstacle to the sustainability of drinking water services for the community in Ababi Village.

CONCLUSION

Community-based drinking water supply has different levels of sustainability. Villages that have a level of sustainability from several aspects such as social, economic, institutional aspects allow to have better service sustainability compared to villages that only have one important aspect. This is because each aspect has a relationship between one another.

The sustainability of community-based drinking water services is strongly influenced by social, human and institutional capital. Community trust in the management, commitments and agreed rules are one of the things that support the sustainability of community-based drinking water services.

The importance of human capital, social capital and institutions play a role in the sustainability of drinking water services, so homework is quite heavy to be able to unite these three aspects together in synergy in creating independence in water management in the community. Increasing the participation of local governments and village governments to see the potential of resources in rural areas will have a positive effect on the direction of village development in the future.

REFERENCES

Abidin, Zainal, Zakaria, Wan Abbas, &; Endaryanto, Teguh. (2021). *Sustainability Study of Clean Water Management Model in Besai Sub-Watershed, Lampung Province*.

Afandi, Yusdi Vari, Sunoko, Henna Rya, &; Kismartini, K. (2014). Sustainability Status of Community-Based Communal Domestic Wastewater Management System in Probolinggo City. *Journal of Environmental Science*, *11*(2), 100–109.

Alfiah, Rindang, Ari, Ismu Rini Dwi, &; Hariyani, Septiana. (2017). Community-Based Sustainable Clean Water Infrastructure Management (Case Study: Social Capital in Water Source Management in the Bamboo Forest of Sumbermujur Village, Lumajang). *Civil Engineering*, *11*(3), 194–202.

Amalia, Kiki Rizky. (2019). Evaluation of the Management of Community-Based Water Supply and Sanitation Programs in Jorong Desert, Harau District, Fifty City Regency. *Journal of Civic Talents*, *2*(1), 1–7.

Chaerunnissa, Chika Chaerunnissa Chika. (2015). Community Participation in the Community-Based Water Supply and Sanitation Program (Pamsimas) in Brebes Regency (Case Study of Legok Village and Tambakserang Village, Bantarkawung District). *Politika: Journal of Political Science*, *5*(2), 99–113.

Kamulyan, Puji, Infrastructure, Master of Asset Management, & Earth, Environment D. A. N. (2018). Evaluation of the sustainability of community-based drinking water supply system management in Blitar City. *Sepuluh* November Institute *of Technology, Surabaya*.

Kamulyan, Puji, Wiguna, I. Putu Artama, &; Slamet, Agus. (2018a). Sustainability Assessment of Community-Based Water Supply System Management in Blitar City. *Journal Of Civil Engineering*, *32*(2), 60–68.

Kamulyan, Puji, Wiguna, I. Putu Artama, &; Slamet, Agus. (2018b). Sustainability Assessment of Community-Based Water Supply System Management in Blitar City. *Journal Of Civil Engineering*, *32*(2), 60–68.

Masduqi, Ali, Endah, Noor, &; Soedjono, Eddy S. (2008). Community-Based Rural Clean Water Supply System: A Case Study of Hippam in Downstream Brantas Watershed. *The manuscript was presented in* the *VIII-ITS Postgraduate National Seminar* .

Munawaroh, Munawaroh, Suyanto, Edy, &; Masrukin, Masrukin. (2020). Social Capital in Sustainable Community-Based Water Supply and Sanitation Programs. *Journal Of Nonformal Education And Community Empowerment*, 73–82.

Nugroho, Ardhianto Adhi, &; Maryono, Maryono. (2016). Sustainability Opportunities for Community-Based Water Supply Program (Pamsimas) in Kendal District. *Journal of Urban and Regional Development*, *12*(2), 140–153.

Sastavyana, Saskya. (2010). Determination of a sustainable rural drinking water supply system model in Subang District. *Journal of Urban and Regional Planning*, *21*(2), 81–94.

Setyaningtyas, Rusdiana. (2022). Sustainability Strategy of Rural Water Supply System in Jember Regency. *Modern Environmental Philosophy*, 91.

Swastomo, Andito Sidiq, &; Iskandar, Doddy Aditya. (2020). Sustainability of community-based drinking water supply system in Piji Village and Gintungan Village in Purworejo Regency. *Planoearth Journal*, *5*(1), 7–13.

Trijunianto, Onny. (2016). Analysis of Sustainability Factors of Pamsimas Program Drinking Water Facilities in Kupang Regency, East Nusa Tenggara Province. *Sepuluh Nopember Institute of Technology, Surabaya Postgraduate* Program.

Wadu, Ludovikus Bomans, Gultom, Andri Fransiskus, & Pantus, Fronialdus. (2020). Clean Water and Sanitation Provision: Forms of Community Involvement in Sustainable Development. *Journal of Civic Education*, *10*(2), 80–88.