

## **Village-Based Common Pool Resource Management: Case Study of Clean Water Management to Overcome Water Crisis Problem in Prambanan Hills Area**

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### **ABSTRACT**

This study examines the management of common pool resources in the context of clean water management by the village. This research departs from the lack of water availability for Prambanan residents who live in hilly areas, this is especially true when entering the dry season. The purpose of this study is to explain that the village is the right institution in managing shared resources or common pool resources where the Village Government and Water User Management Organizations (OPPA) are the factors that determine the success of using common pool resources in meeting clean water needs for the community. With the method of collecting data through observation, interviews and documentation related to the required data. This research is qualitative research, with the study method is a qualitative case study. Based on the results of research and data analysis obtained, some of the efforts that have been made by the Government cannot be said to be effective and are not a solution to overcome the drought problem in Kapanewon Prambanan hilly areas but after the management is handed over to the village the distribution of water becomes more even for the community. In conclusion, in the management of shared resources or common pool resources, villages are the right institutions to manage shared resources or common pool resources because they are distributed more evenly to the community and can improve the welfare of the village community itself. With the management of clean water by the village, the burden of the government in overcoming the drought problem in the community can be overcome.

**Keywords:** Common Pool Resource, Village, Water User Management Organization (OPPA)

### **ABSTRAK**

*Penelitian ini mengkaji terkait pengelolaan sumber daya bersama atau common pool resource dalam konteks pengelolaan air bersih oleh desa. Penelitian ini berangkat dari kurangnya ketersediaan air bagi warga Prambanan yang tinggal di daerah perbukitan, hal ini terutama terjadi ketika memasuki musim kemarau. Tujuan dari kajian ini adalah hendak menjelaskan bahwa desa merupakan institusi yang tepat dalam pengelolaan sumber daya bersama atau common pool resource dimana Pemerintah Desa dan Organisasi Pengelola Pemakai Air (OPPA) sebagai faktor yang menentukan keberhasilan pemanfaatan common pool resource dalam pemenuhan kebutuhan air bersih untuk masyarakat. Dengan metode pengumpulan data melalui observasi, wawancara serta dokumentasi terkait data yang diperlukan. Penelitian ini merupakan penelitian kualitatif, dengan metode kajiannya yaitu studi kasus kualitatif. Berdasarkan hasil penelitian dan analisis data yang didapat, beberapa upaya yang sudah dilakukan oleh Pemerintah tidak bisa dikatakan efektif dan bukan merupakan solusi untuk mengatasi masalah kekeringan di Kapanewon Prambanan daerah perbukitan tetapi setelah pengelolaannya diserahkan ke desa pendistribusian air jadi lebih merata untuk masyarakat. Kesimpulannya, didalam pengelolaan sumber daya bersama atau common pool resource ini desa merupakan institusi yang tepat untuk mengelola sumber daya bersama atau common pool resource karena dalam pendistribusiannya lebih merata untuk masyarakat dan dapat meningkatkan kesejahteraan masyarakat desa itu sendiri. Dengan dikelolanya air bersih oleh desa beban pemerintah dalam mengatasi masalah kekeringan dimasyarakat dapat teratasi.*

**Kata Kunci:** *Common Pool Resource, Desa, Organisasi Pengelola Pemakai Air (OPPA)*

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## **INTRODUCTION**

This study aims to examine common pool resources or shared resources of clean water management which is used as a clean water service unit in the village. The village's clean water service unit is managed by the village community, initiated by the Village Government in collaboration with the Water User Management Organization (OPPA). This is expected to overcome the problem of lack of water availability for Prambanan residents who live on the hills. Moreover, this study also analyzes institutions' role, problems, organizational structure, regulations and relations between the Village Government and the Water User Management Organization (OPPA). The hilly part of the Prambanan often experienced difficulties fulfilling water needs, this especially occurs when the dry season enters. Various efforts have been done by the government to overcome the problem of water availability for Prambanan residents who live on the hilly area. Handling the water crisis in Prambanan requires commitment and joint steps from various parties, including the government, private sector and society. This joint step must be well-directed to ensure sustainable water availability and reaching the community at all times. *Common pool resources* are resources that are beneficial to a group of people, but provide reduced benefit to everyone if each individual pursues his or her own interests. Water resources are natural resources that are not alive (abiotic) but can be renewed (renewable resources). Water is one of the most important natural resources for living creatures, but often becomes a problem in its existence (occurrence), circulation (circulation) and distribution (distribution).

Common Pool Resources (CPR) is a system of natural and man-made resources that are shared by groups of users. For example-of the resources system-, water sources, mining, agricultural land, grazing fields, lakes, forests, seas, ponds, irrigation (Ostrom, 1990). In reality, Ostrom's concept of institutional collaboration is translated into a community-based development paradigm, as implemented through the National Community Empowerment Program or commonly known as "PNPM Mandiri" (Carroll, 2012). In particular, PNPM orients communities as managers of program funds in villages. Saunders (2014) argue that Ostrom's common pool resource theory experiences a simplification from local institutions to formal institutions in joint projects. Commons projects, such as community-based natural resource management are simplified adaptations by some non-governmental organizations and development agencies of widespread acceptance and promise to give control of resources to groups and individuals.

Clean water is an essential need for all humans, because all community activities in various aspects of life require clean water. Clean water is one of the basic needs for the survival

of humans and other living creatures. In human life, water is used for various purposes, such as: toileting (bathing, washing, toileting), cooking food, drinking, and other purposes. If humans have difficulty obtaining and accessing clean water, this will affect human life. Moreover, because of the importance of the need for clean water, it is natural that the clean water sector gets top priority because it concerns the lives of many people.

Furthermore, to maximize water distribution in Prambanan, the Water User Management Organization (OPPA) plans to establish a service unit that work in the clean water sector. In Prambanan there are three springs, namely: the Prambanan 1 System, Prambanan 2 System and Prambanan 3 System. However, the Prambanan 2 and 3 Systems had problems and were finally managed by PDAM. Currently, especially in Sambirejo Village, the Prambanan 1 System is used which is used as a service unit operates in the field of clean water management in collaboration between the Village Government and the Water User Management Organization (OPPA) and it is hoped that the distribution of clean water to residents will run optimally. The Water User Management Organization (OPPA) is a non-PDAM rural clean water management organization and has a concept that refers to roles and responsibilities in serving water needs in its area.

The role of the Village Government in institutional management is the leading unit of development for the community. In particular, service units in villages are a government program that must be empowered in the context of good socio-economic empowerment of the community by prioritizing community participation and initiative. The village service unit is a service from the village and is aimed at maximizing the welfare of the village community itself. The establishment of service units in villages is an effort to improve community welfare. The establishment of a clean water management service unit in Sambirejo Village which is managed by the Water User Management Organization (OPPA) with a community self-help system to improve the welfare of village communities to fulfill clean water needs.

## **THEORETICAL REVIEW**

The enactment of Regulation No. 6 of 2014 concerning Villages, the village government is present as a representative of the constitutional mandate. Villages are assigned four authorities, including organizing, building, empowering and developing village communities. This means that the village government has the right to regulate and manage part of the village's rights and authority and village-scale local authority, including managing shared resources or common pool resources if the shared resources or common pool resources located in the village. Moreover, there are several views regarding the best institutions in managing shared resources or common pool resources. The concept of shared resources or common pool resources must be understood as a public good. Goods are collectively owned resources if they fulfill limitations or are subtractive in the context of public goods. If the use of common pool resources is not regulated and managed jointly, it is vulnerable to causing conflict. Garet Hardin explained that the collective tragedy occurred as a result of the absence of ownership

rights and high authority resulting in over-exploitation. Therefore, it is better to privatize or let the state to handle it (Hardin in Sakro, 2020). In contrast, Elinor Ostrom proposed a common resource pool managed by the community to avoid shared tragedy (Ostrom in Sakro, 2020).

The institutions that manage Common Pool Resources here refers to formal institutions and local institutions in the village. These two views cause a debate between the substantial and the normative (Nugroho et al, 2017). The normative view is based on formal status. In other words, institutions influence society, not society influences institutions. In addition, Hodgson stated that institutions are not only seen as rules or norms or behavior or habits that exist within a person, an organization and other entities. However, institutions are also established systems where embedded social rules influence social interactions (Nugroho, et al., 2017). This natural view places reality influencing institutions. The characteristics of this kind of institution grow naturally. Usually based on common interests by relying on local initiatives. Norms, rules and institutional designs are formed based on local wisdom and local community habits.

Institutions are needed to manage common pool resources well and sustainably. The word institution is a rule that humans use when interacting in repeated and structured situations at various levels of analysis. In addition, efforts to privatize management by the government and control utilization by local communities are also needed. Patriana et al., (2016) in their journal explain the change in the ritual of protecting communal resources for private and shared resources which is regulated through the government's agro-ecological control regime, to a method of large-scale commercialization and privatization to avoid theft. Mulyono (2019), also explained that the use of common pool resources or water resources is guided by the principle of economic efficiency in preparing patterns including utilization priorities. Setting a good water policy is very necessary in water privatization, so there will be no losses to the country that practices it. In this case, government regulations play an important role in limiting the use of water, as practice by the UK. However, Kustanti, et al (2014) gave contrary arguments that private ownership rights, which provide full autonomy for managers, have proven unable to guarantee the sustainability of pond business management by converting mangrove forests. This is because there is complete freedom (full autonomy) for the owner to control, utilize and even transfer rights (transfer of rights) (Ostrom in Sakro, 2020).

Apart from privatization management, there are also arguments stated that community management is the right institution to manage the Common Pool Resource. Maryati et al., (2018) explained that the government's limitations in meeting drinking water needs encouraged the implementation of a Drinking Water Supply System (SPAM) development program managed by community groups, for example the Drinking Water User Population Association (Hippam). Management of community-based drinking water supply systems has the potential to be seen from the perspective of managing common pool resources (CPR). Budiarto (2017) also explained that community-based management, such as mangroves, which are one of the natural resources and one of the "Common Pool Resources/CPR" which is very important because it provides various benefits for human life directly and indirectly.

Common pool resource management faces challenging problems such as over-exploitation which results in a decline in the quality, quantity and continuity of natural resources (Nursidah, et al. 2012), and overcome this problem, strong institutions are needed. CPR management institutions can be formed based on government policy (top down) or community initiatives (bottom up). Recognition and incorporation of local institutions in the formulation of natural resource management policies is essential to realize natural resource management because local institutions have great collective action (CA) potential and fulfill the characteristics of sustainable CPR management (Nursidah, et al. 2012). Collective action (CA) possibly interpreted generally as the joint action of a group of people to achieve a common goal.

Furthermore, in reality, Ostrom's concept of institutional collaboration is translated into a community-driven development paradigm, as implemented through the National Community Empowerment Program or commonly known as "PNPM Mandiri" (Carroll, 2012). In particular, PNPM orients communities as managers of program funds in villages. Saunders (2014) argue that Ostrom's common pool resource theory experiences a simplification from local institutions to formal institutions in joint projects. Commons projects, such as community-based natural resource management are simplified adaptations by some non-governmental organizations and development agencies of widespread acceptance and promise to give control of resources to groups and individuals. This program model was born as a form of revision of state-led integrated rural development and was then used by the Indonesian government in the independent PNPM (Eko, Sutoro et al., 2017).

This study formed differently from previous studies because this study aims to explain why villages are the best institutions for managing common pool resources, by the reason of managing villages the government's burden in dealing with water problems can be overcome. Management of common pool resources is better managed by the village. Village collective action is an institution that spreads and unites itself by forming a village council. In addition, as stated by Robert Wade, this institution emerged on the basis of mutual needs and interests to provide common goods without state intervention (Wade in Sakro, 2020). The village becomes an institution that regulates, administers and manages the common pool of resources for common good. Wade demonstrated this success through his studies in villages in India (Wade in Sakro, 2020). Successful institutions avoid state intervention and complex organizations but rely on cooperation between village residents according to the village context. The authority to manage the common pool resource is in the hands of the village which is tasked with organizing, administering and managing the common pool resource.

## **RESEARCH METHOD**

This study will explain that the Village is the best institution for managing common pool resources and analyzing the institutional action that occur in the relationship between the Village Government, Water User Management Organizations (OPPA) and Water User

Communities in the utilization or management of common pool resources managed by the Village, whether the people in the village can achieve a prosperous life, where the needs of the community, especially the need for clean water, can be met. Therefore, this research will use qualitative research with explanatory methods. The place where this research was conducted was a hilly area of Prambanan district, Sleman Regency, Special Region Yogyakarta province. The time used by researchers for this research was carried out from the date the research permit was issued, namely December 2021 to January 2022.

The most important research activity is data collection, and data sources are anything that can provide information about related research. Two types of data sources used in this research, the first is primary data, the main source used as research material is primary data, including data collected through interview sources at the Water User Management Organization (OPPA) Office in Kapanewon Prambanan, Sleman Regency and its surroundings. Second, the secondary data, namely data obtained from village monographs and media news, articles or journals related to research. The data collection method is through observation, interviews and documentation related to the required data.

Furthermore, snowball sampling technique is use to determine informants in interviews that commonly known as a technique for determining informants often used in qualitative research. In snowball sampling, the data collection process performed as follows: a small number of informants which then over time grows to a large number due to the need for more specific and more information. In the process of determining informants in the field, the authors first came to the Sambirejo Village office and met with the Sambirejo Village Head, namely Mr. Mujimin. After meeting and conducting an interview, the authors directed to meet with Mr. Giyatno as Chair of the Water User Management Organization. After conducting the interview, the authors also proposed to interview Mr. Samidi as the Organization's Treasurer. Water User Managers, after obtaining information and data related to clean water management, the author then interviewed water user communities in several villages in Kapanewon Prambanan, Sleman Regency.

In addition, after the data obtained from the field was sufficient, the author move on to data analysis process. The qualitative analysis that the researcher used was an interactive analysis technique which is a cyclical process that moves between the three main components, namely data reduction or selection, data presentation and drawing conclusions. Data reduction can be interpreted as a selection process, focusing on simplifying, abstracting and transforming rough data that emerges from notes that appear in the field. After reducing the data, the next step is to present the data. Data presentation is a series of information organizations that enable research conclusions to be made. The presentation of data is intended to find meaningful patterns and provide the possibility of drawing conclusions and providing action (Miles and Huberman, 2007). The final step in analyzing qualitative research is drawing conclusions. Drawing conclusions is part of a complete configuration activity (Miles and Huberman, 2007: 18). Conclusions also verified during the research. Conclusions are drawn since the researcher

arranges notes, patterns, statements, configurations, causal directions, and various propositions (Harsono, 2008).

## **RESULT AND DISCUSSION**

### **Identification of Drought Areas Mapping in Kapanewon Prambanan**

Drought is a serious problem that often arises when the dry season arrives. Numerous places in Indonesia experience the problem of water shortages or commonly called drought. Drought can happen anywhere, in the Special Region of Yogyakarta, more precisely in Prambanan district, every year, some urban villages experience severe drought. The sub-district experiencing the worst impact of the drought are Sambirejo, Wukirharjo, Sumberharjo and Gayamharjo. Several Prambanan district are geographically located with natural conditions in the form of hills or moors and long periods of drought often occur which makes it difficult for heavy vehicles to reach them due to the steep terrain. Moreover, the need for clean water there is difficult to overcome. The natural disaster of drought not only impacts humans, but also impacts all aspects of life, including livestock, and farmers' rice fields also dry up so that crop failure can also occur. The government continues to try to find solutions to the problem of this natural disaster of drought.

Furthermore, as long as the government has not provided clean water assistance to the community, they choose to buy clean water such as buying water per tank or making rainwater reservoirs. However, the intensity of the rain falls unevenly in all areas in Yogyakarta so that areas hit by drought still need water assistance, and rains only happen in certain areas, also doesn't last long. Problems related to drought or lack of clean water in the community are indeed problems that are very difficult to overcome, the Regional Disaster Management Agency (BPBD) makes the community as the party affected by the disaster, must be empowered with adequate knowledge and skills, so that they are able to work to deal with the impact disasters and risk reduction where the community easily collaborates (works together) to carry out mitigation or risk reduction efforts.

### **Efforts Made to Overcome Drought in Prambanan District Hill Area**

Clean water is one of the basic needs for human and other living creatures. In human life, water is used for various purposes, such as: for toilet purposes, cooking food, drinking, and other purposes. If humans have difficulty obtaining and accessing clean water, this will have an impact on human survival. The hilly part of the Prambanan District area has often experienced difficulties in meeting water needs. This, especially happens in dry season. Handling the water crisis in Prambanan requires commitment and joint action from various parties, namely the government, private sector and society. Various efforts have been made to overcome the problem of water availability for Prambanan residents who live on the hills, including:

## 1. Clean Water Subsidies from the Government

The Sleman Regency Government, through the Sleman Regency Regional Disaster Management Agency (BPBD), is dropping clean water in Prambanan, a hilly area that is experiencing drought or lack of clean water. Five villages in the Prambanan area are prone to drought during the dry season. The Regional Disaster Management Agency (BPBD) of Sleman Regency has prepared subsidies for providing clean water to anticipate the drought. However, this is a preventive action if an area experiences drought or if the clean water network is damaged. Clean water dropping is an effort by the Sleman Regency Government to overcome water shortages in the area. The Sleman Regency Government will provide assistance in the form of water pumps and other supporting equipment, so it is hoped that there will be no more water dropping into the area in the following years. However, people must still be wise in using water. The government also appealed to the public to make water tendons to collect rainwater later, expecting the collected rainwater can later be utilized when the dry season arrives. However, the government's water dropping subsidy has the potential to cause social jealousy. This was conveyed by Giyatno as Chair of the Tirtomulyo Water User Management Organization (OPPA):

"Before OPPA was active during the dry season in Prambanan received subsidies from the government. Every year, up to 2000 clean water tanks dropped in Upper Prambanan, the people were too pampered by the government, which gave rise to problems between residents, because if water was helped from tanks the distribution was not evenly distributed and usually. It's unfair, some people get it, some don't, and it has the potential to cause social jealousy so that dropping water from the government is not appropriate if it is used as a solution to the drought in Upper Prambanan."

## 2. Water Dropping Using Tanks by Private Sector

Residents in several areas in Prambanan, Sleman Regency are starting to run out of clean water at the peak of the dry season. Private parties dropping water in areas that are starting to dry out, because the government has not delivered water to locations that really need clean water. Residents are forced to buy water to meet their daily needs. Droughts are often experienced in a hilly area of Prambanan district during the dry season. In addition, to meet the need for clean water, apart from buying water from tanks, residents also buy water from tanks or take water from several clean water sources, by the reason that the residents' wells are dry, they have to travel up to 1 kilometer to get clean water for their daily needs. Most of those who can afford clean water source water from the private sector by purchasing it, where the price of clean water can reach 150 thousand rupiah per 5 cubic meters. This was conveyed by Wartini as a water user community:

"In the past here, when it's dry season, drought occurs, the wells were almost dry if there were any, the water would definitely be murky, whether you wanted it or not, you had to buy water, water is a basic daily need. If there wasn't any water, what happened in the past, sometimes you could go

far to find water, buy it Water is expensive, up to 150 thousand for just 5 cubic meters”.

### **3. PAMSIMAS Program**

PAMSIMAS is one of the Indonesian government programs with support from the World Bank, and implemented in rural and suburban areas. PAMSIMAS is a platform for rural drinking water and sanitation development implemented using a community-based approach. In addition, as a basic public service, based on Regulation no. 23 of 2014 concerning Regional Government, drinking water and sanitation services have become mandatory affairs of the Regional Government. The Pamsimas program plays a role in providing financial support for both physical investment in the form of facilities and infrastructure, and non-physical investment in the form of management, technical support and capacity development. The Pamsimas program aims to increase the number of facilities for underserved communities, including low-income communities in rural and peri-urban areas. Moreover, with Pamsimas, it is hoped that the community can access sustainable drinking water and sanitation services and increase the implementation of clean and healthy living behavior. In Prambanan Distrit, Sleman Regency often experiences difficulties with clean water during the dry season. For long-term needs, the government immediately build a community-based Drinking Water and Sanitation (Pamsimas) network. The government build a Pamsimas network in several sub-districts in Prambanan Distrit, including Sambirejo, Gayamharjo, Wukirharjo, Sumberharjo, and Bokoharjo. The Pamsimas program is implemented to support two national agendas, including increasing coverage of adequate community-based drinking water and sanitation services.

### **4. Water User Management Organization (OPPA- Organisasi Pengelola Pemakai Air)**

The Tirtomulyo Water User Management Organization (OPPA) was formed in 2002 after the Sleman Regency Government built a clean water network in Prambanan with a main well in Majasem Bokoharjo in 2001 in the name Prambanan I System because the Tirtomulyo Water User Management Organization (OPPA) is still under the management of the Kapanewon Prambanan Water User Management Organization (OPPA). In 2001, the process of constructing the Prambanan I System clean water channel began with the management of the Tirtomulyo Water User Management Organization (OPPA), in the form of 1 (one) Main Well, 2 (two) Boosters and 3 (three) reservoirs (Water Storage Tanks). Works with 3 (three) diesel engines as motor drives to start the pump. However, to save costs, electricity has now been replaced by electricity to drive the pump in water distribution.

The Tirtomulyo Water User Management Organization (OPPA) is under the Kapanewon Prambanan Water User Management Organization (OPPA) to manage the Majasem Well Pambanan I System. However, in order for clean water management to be more efficient and equitable for the community, the Water User Management Organization (OPPA) was handed

over to Sambirejo Village, Prambanan Distrit, Sleman Regency and became a Village Institution outside BUMDesa with a Decree from the Village Head so that currently it is the authority to regulate and manage the Water User Management Organization (OPPA) Tirtomulyo is a village, specifically Sambirejo Village. In addition, the obstacles that often occur in management by the Water User Management Organization (OPPA) before switching to using electric power in the sense of still using diesel fuel are restrictions on purchasing diesel. This was conveyed by Mujimin as Carik of Sambirejo Village:

"The problem that most often occurs is that before switching to electric power, the purchase of diesel fuel is limited, whereas the need for diesel can be around 450 liters per day, while only around 100 liters per day can be purchased and cannot hoard it because if you do, you have to take care of permits from regent and that is definitely complicated and in the end water management operations which should take 8 hours can only take 3 to 4 hours so it is not sufficient and that affects the level of satisfaction of people who buy water, then based on BPBD's proposal to replace diesel with electricity in 2014 our operations will be bigger. it's economical.

### **Institutional Management of Common Pool Resources by Villages in Overcoming Drought in Kapanewon Prambanan Hill Area**

Conceptually, the Village Government is the Village Head who is assisted by Village officials as an element of village government administration. In the Regulation Number 6 of 2014 concerning Villages, it is clear that a village is a legal community unit that has territorial boundaries and is recognized for its authority to regulate and manage government affairs and the interests of the local community. So that the village has the authority to regulate and manage its own government, including managing shared resources or common pool resources in the village. The case in Prambanan Distrit, where the Water User Management Organization (OPPA), which is a village institution outside BUMDesa, is able to manage shared resources or common pool resources in this research, namely water resources to overcome problems that often occur in Kapanewon Prambanan, a hilly area which has often been experiencing difficulties in meeting water needs.

This Water User Management Organization (OPPA) was originally formed by Prambanan Distrit, but as time went by, this organization's development was inconsistent and there was a vacuum in management, so that clean water management was more efficient and equitable for the community. This Water User Management Organization (OPPA) was handed over to Sambirejo Village, Prambanan Distrit, Sleman Regency and became a Non-Governmental Organization. The transfer of the Water User Management Organization (OPPA) to the village in question is the handover of clean water management which is not a government-owned asset which is handed over to the village, this handover aims self-management by the community itself so that the village government only needs to supervise its management and if there are obstacles or problems What happens in the government's clean water management can help to overcome this problem

Furthermore, after the Water User Management Organization (OPPA) was handed over to the Village, an evaluation was carried out to form a new management for clean water

management based on the Decree of the Village Head or *Perkades*. This was also driven by numerous complaints from the community regarding the distribution of clean water which was congested (not smooth). Various efforts have been made so that the management of this shared resource can overcome the problem of drought and ensure sustainable water availability and reach the community all the time. The Tirtomulyo Water User Management Organization (OPPA) is regulated in the Village Head Regulation or Village Head Regulation, the management of the Tirtomulyo Water User Management Organization (OPPA) is decreed by the Village Head of Sambirejo Distrit, where previously it was under the authority of Distrit with a District Head Decree. With the management of clean water by the Tirtomulyo Water User Management Organization (OPPA), the government's burden in overcoming the problem of drought and fulfilling the community's basic clean water needs can be overcome.

The relationship between the Village Government and the Tirtomulyo Water User Management Organization (OPPA) has been going well, in managing shared resources or common pool resources, the Village Government is able to foster and supervise and help overcome problems that occur in managing shared resources or common pool resources of clean water management which is useful for meeting the community's basic clean water needs. When a drought or clean water crisis in Prambanan occur, this hilly area becomes a difficult problem for the Government, especially the Village Government, to overcome, this becomes a burden that must be borne and overcome by the Village Government because the Village Government has an obligation to improve the welfare of its community. In addition, with the management of clean water by the Tirtomulyo Water User Management Organization (OPPA), the government's burden in coping the problem of drought and fulfilling the community's basic need for clean water which can improve community welfare can be overcome.

This clean water management has been active and developing from 2013 until now and has been able to distribute clean water to 13 hamlets in 5 sub-districts located in a hilly area of Prambanan, which experiences severe drought every dry season. With this clean water management, the community is helped in meeting their daily water needs. Distribution of clean water in the community is charged at 8 thousand rupiah per cubic for household needs, 9 thousand rupiah per cubic for MSMEs, and 10 thousand rupiah per cubic for hotels or accommodation. The Tirtomulyo Water User Management Organization (OPPA) regularly holds meetings once a month to discuss or evaluate the management of shared resources or water resources and for payment or billing of water to water-using communities is also held monthly.

Clean water management operational equipment is also routinely checked to anticipate damage, because it costs a lot of money if damage occurs so this becomes an obstacle in management. Obstacles in operating the equipment require quite large costs in maintaining clean water management equipment. Obstacles that occur for example if the pipe is damaged and the cost to repair it can reach hundreds of millions, there are also pumps that have to be replaced, in Sambirejo Village there are already 3 pumps and the price of 1 pump can reach

250 million rupiah. Even electricity payments for 3 wells and 2 boosters reach 35 million rupiah per month.

Shared resources management, conflicts often arise, the emergence of conflict often becomes an obstacle in management progress, therefore conflicts need to be well-resolved, but the existence of conflict can encourage progress in managing shared resources so that it will be even better in the future. There are many conflicts that occur in society in the distribution of clean water, for example people often complain about clean water is not smooth, there are also frauds in the distribution of clean water, conflicts that often occur from small to large conflicts. Those problems need proper handling. The Water User Management Organization (OPPA) as an organization under the village government that manages water resources must be able to resolve these conflicts.

Based on research results, the Water User Management Organization (OPPA) has been able to overcome conflicts in society that often occur in clean water management. From the aspect of service perceived by the community, it is also considered good and able to develop, where this management started running in 2013 and is still running well, means that the Tirtomulyo Water User Management Organization (OPPA) is able to maintain the quality of service expected by clean water user, and being able to generate profits to work on operational activities, maintain assets, pay existing obligations, and be able to manage or maintain the continuity of clean water services to the community in Prambanan in a hilly area which often experiences quite severe droughts. According to the local water user community, the existing services related to clean water are indeed good, although sometimes it often does not run smoothly if the use of clean water is used simultaneously with other residents because everyone definitely needs clean water in their daily lives so this happens very often, and the public understands this.

## CONCLUSION

The enactment of Regulation Number 6 of 2014 concerning Villages, villages are explicitly legal community units that have territorial boundaries and are recognized for their authority to regulate and manage government affairs and the interests of local communities. The village has the authority to regulate and manage its own government, including managing shared resources or common pool resources in the village. In the hilly area of Prambanan District, the common pool resource is managed by the Water User Management Organization (OPPA), which is an organization formed by Prambanan District which was handed over to Sambirejo Village and became a Non-Governmental Organization to manage water to overcome the problem of drought in a hilly area of Prambanan District. The management of water resources by the Water User Management Organization (OPPA) greatly progressed from year to year and has been able to distribute clean water to 13 hamlets in 5 villages in hilly area of Prambanan District, which experiences severe drought every dry season. In the management of shared resources or common pool resources by this village, there is a favorable relationship between the Village Government, the Water User Management Organization (OPPA), and the

water user community so that the village is the right institution to manage shared resources or common pool resources because in the distribution is more equal to the community and can improve the welfare of the village community itself. In addition, with the management of clean water by the Tirtomulyo Water User Management Organization (OPPA), the government's burden in overcoming the problem of drought and fulfilling the community's basic clean water needs can be overcome.

## RECOMMENDATION

Several suggestions or recommendations related to the management of common pool resources. *First*, the management of common pool resources or shared resources must be formed by a village Communication Forum between the Tirtomulyo Water User Management Organization (OPPA) and the villages in Kapanewon Prambanan, Sleman Regency. This must be done because the common pool resource being managed is in another village, not in Sambirejo Village as the manager of the common pool resource. *Second*, the management of the common pool resource must be distributed as evenly as possible and always involve community participation. Third, this management is appropriately managed by the village, there is no need to replace the joint resource management institution because it is in accordance with the two principles laid down in the Village Law, namely that the Village has the right to manage, make rules, administer and distribute justice to the community through managing common pool resources or shared resources.

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