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Community Based Common Pool Resources Management Model

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Abstract: *Springs are one of the common pool resources whose ownership cannot be controlled by individuals. This is because common pool resources are used by many people. Gunungkidul Regency is an area that has limited water resources. Katongan District has a spring which is a source of clean water for the community. This research examines the management model for springs which become common pool resources as a source of clean water. By using a qualitative descriptive approach and supported by information from competent parties, both directly and indirectly, regarding the management of common pool resources, it is hoped that an ideal management model will be found. The research results show that the springs which are common pool resources in Katongan District are managed by the community around the springs. This can be seen from the management plan which was designed together by forming a spring management group called Sumber Agung, then the community worked together to carry out pipework to distribute clean water. Next, an evaluation is carried out every month which is carried out independently to control the management which is carried out jointly.*

Keyword: *Management; Common pool resources; Mutual cooperation; Community*

INTRODUCTION

Common Pool Resources (CPR) is a system of resources originating from nature and man-made whose existence is shared by various groups (Kusumawati, 2022). Examples of common pool resources include groundwater sources, mining, forests and the sea (Fatma, 2022). So common pool resources can be said to be resources whose benefits can be felt by many people.

Springs are a shared resource that must be preserved to maintain their useful functions, one way that can be done is by creating organized spring management. Management of common pool resources in the form of springs must be protected and conceptualized so that their use is clearly directed (Manik, 2021). Gunungkidul Regency is an area where there are still many common pool resources in the form of springs. Its existence is useful for meeting water needs in people's lives. But despite this, Gunungkidul Regency is still experiencing problems related to water shortages.

The various potentials contained in the springs above can actually be utilized and used as a strategy in dealing with problems related to water scarcity. One way is to use conservation or spring management methods. Adianus (2016) stated that the water crisis phenomenon can be handled through spring conservation. The implementation of environmental conservation in its function is included in a series of efforts to maintain sustainability and benefits for the wider community.

Currently, one of the strategies used by the community to anticipate the impact of drought and water shortages is to maintain the existence of water springs. This scientific article examines the common pool resources management strategy model implemented by the community with the aim of using it as a source of clean water for the community. Apart from that, managing common pool resources is also a preventive measure to overcome the water crisis experienced by the community.

Katongan sub-district is one of the sub-districts located in the northern part of the capital city of Gunungkidul Regency, so it is included in a zone that has the potential to experience drought. In the Katongan sub-district area, there are common pool resources in the form of springs which to this day are protected and maintained by the local community because these springs still have the function of meeting the community's living needs. The spring is called Jomboran spring. Based on the research results, it shows that the existence of the springs in Katongan District is maintained using a community-based management model consisting of local communities.

The sustainability of the spring area as a common pool resource in Katongan District currently depends greatly on the participation of the local community, this is proof that the role of the community is still very active. The community is in the form of an informal community group called the Sumber Agung Group. The involvement of local communities in the protection and preservation of water sources is carried out through independent community-based management and socio-cultural methods. This is because the existence of the Jomboran spring has also been used by the community for their daily water needs.

The aim of this research is to analyze the spring management model as a category of common pool resources which has the function of meeting the water needs of the community which is run on a community basis. This scientific article also analyzes further the strategies of communities that implement the spring management model as a common pool resource. Through analysis of the community-based common pool resources management model, it will be possible to see how the community responds to the implementation of water use rights wisely and purposefully and without a detrimental impact on the environment.

RESEARCH METHOD

This scientific article examines the community-based common pool resources management model run by local communities. The method used in this research is descriptive qualitative. Qualitative research starts from phenomena or specific things and then moves on to general phenomena or things to understand studying a phenomenon inductively so that it tends to be contextual (Darmalaksana, 2020). Qualitative research is carried out using certain settings found in real (natural) life and aims to investigate and understand phenomena with the substance of what happens, why it happens, and how it happens.

With qualitative analysis, this research is then presented descriptively to explain all forms of data and information obtained, so the reasons for a phenomenon can be identified and provide evidence as support or refutation in the explanation. This was done with the aim of finding relationships between various aspects of the phenomenon being studied (Kusumastuti, 2019).

The research in this scientific article was carried out in the Katongan District which is located in Kapanewon Nglipar, Gunungkidul Regency. As one of the areas that has common pool resources in the form of natural springs. The technique for determining informants as research subjects used in this data collection was purposive sampling. The definition of purposive sampling is a technique for collecting samples/data using certain considerations therein (Fadli, 2019).

The informants chosen in this research first came from the Katongan Village government as local policy makers consisting of Jumawan as Katongan Village Head and Hariono as Katongan Village Head. Furthermore, the informants came from the Sumber Agung group management consisting of Eko as coordinator, Sutikno and Yuli as operators. Then the final informant came from the water consumer community, namely Suprihatini, Sutijo and Suradi. So, there were 9 informants in this study. The informants are determined using considerations that are considered relevant to the characteristics of the sample or data that have been determined in this research, so that they can meet the objectives of this research.

RESULT AND DICUSSION

Spring management is a series of processes from start to finish aimed at sustainability. Water source management is carried out to regulate the reciprocal relationship between natural resources and humans in order to create a balanced ecosystem, ensure the sustainability of the benefits of these natural resources for humans and other creatures and maintain the existence of these natural resources (Fakhriyah, 2021). The existence of the Jomboran spring, located in Padukuhan Nglebak, Katongan District, is a source of life asset for the community to meet their water needs.

Katongan Village has one spring whose function is as a water source to meet the needs of the community in several areas of Katongan Village. The spring called Jomboran is currently still managed by the community through the Sumber Agung Group. In this research, the author uses four indicators from governance theory as a way to analyze the implementation of spring management, namely planning, organizing, actuating and controlling. These indicators measure the extent to which management is carried out and determine the goals to be achieved. Analysis based on the results of research that has been carried out using analysis of four management indicators, namely as follows:

Analysis of the Spring Utilization Planning Process

Planning is the process of determining a long-term goal to be achieved, developing a strategy mapping to realize that goal and developing program stages that can be implemented. The management of Jomboran springs certainly has a planning aspect in its management.

The management of Jomboran springs leads to long-term management. This is analyzed based on the objectives of the Sumber Agung Group as the current manager, which has long-term management objectives based on benefits that have a direct impact on the local community on a fairly large scale. Plans to maintain the existence of these two springs with management methods by local communities are still being carried out, although in limited conditions.

The existence of the Jomboran spring has been used by the local community to meet their daily clean water needs. It can be said that management planning for these two springs has been in the works for a long time. Eco says:

"From the past it has been managed so that it can be used, but it has not been as organized as it is now because there are limited human resources to manage it, but efforts for long-term management continue to be made to this day, because this spring has benefits and can be felt directly by the community" (interview with Eko member of the Sumber Agung Group on December 14 2023)

The aim of managing the use of Jomboran springs is so that they can be channeled and used more widely. To support long-term management of the Jomboran spring, a water storage tank was built. This is a long-term plan that will be used to manage and continue to preserve the benefits and functions of the Jomboran springs.

Based on the analysis of the data obtained, it shows that plans for developing and preserving the function of the Jomboran springs have been prepared for the long term, although only in an informal way. This means that there is no written road map for future management planning for Jomboran springs, only through ideas prepared by the Sumber Agung Group. Part of the management process for the existence of springs that have a direct function and the benefits are felt by the community. The Padukuhan Nglebak community really feels the benefits of water source management in meeting their water needs. The aim of managing the use of Jomboran spring water sources is so that they can be channeled and used more widely.

Management Organization Process Analysis

The follow-up to the planning process is ornamentation. The definition of organizing is the process of preparing an organizational structure that is in accordance with the objectives that have been set, in accordance with the resources owned and in accordance with the conditions of the surrounding environment. Apart from that, organizing is also a strategy for dividing tasks in realizing common goals.

The organization at Jomboran springs is in the form of a group from the local community which is based on shared awareness. Jomboran springs are managed in the form of a group. The history of the management of these springs dates back to ancient times when the Jomboran springs were first discovered, and they were managed by a group of unorganized local communities. This happens because they only consist of volunteers. In the 1960s, this volunteer group was commanded by the hamlet and several community leaders.

The existence of springs has existed since time immemorial, but in ancient times their management was not organized and systematic because there was no permanent group or administrator to manage the springs. As time goes by, awareness and initiative from the community grows to further improve its management through more organized groups. Previously unstructured management still had several obstacles and problems faced. Therefore, a spring management group emerged called the Sumber Agung Group.

This group is a group whose management consists of people who have the awareness and initiative to manage this spring because it is considered to have enormous benefits for some of the communities around the Jomboran spring. The Sumber Agung group is a new

group that was formed in 2019, so it is a group that has not been around for long. Sutijo is an informant who has been one of the administrators and conservationists of the Jomboran springs from the past until now, he said:

"In the past, I was one of those who developed this, bro, because of the initiative and awareness to utilize Jomboran resources because they have benefits, so we took care of them. "My friends and I have always looked after and cleaned this source until now because sometimes there are not enough people to look after it because we are busy" (interview with Sutijo, community leader and spring conservationist on December 19 2023)

The total number of members involved is 6 people. The composition of its members is not formal, meaning there is no definite structure in its management. According to Sutikno, the management of the Sumber Agung Group is divided into tasks, there are those who take care of the field directly and then there are also those who take care of the documents and reporting section. For example, one of the informants in this research is Sutikno, who is one of the actors who plays an important role in the management of Jomboran springs, he is the one who takes care of the main financial part, the technical part in the field in running water machines and even becomes a technician when damage occurs.

Overall, the organization in managing the Jomboran springs has been established and is running, but not yet optimally. Because of the limitations they have, they become an obstacle in carrying out the plans and programs that have been prepared. However, the organizational aspect, especially in the Sumber Agung Group, is in accordance with the criteria because there is already a division of tasks within it. So that to carry out the management it is organized with tasks that have been divided. This makes it easier to run programs and coordinate with related parties when necessary.

On the other hand, the Sumber Agung Group, judging from its legality, does not yet have an official legal basis for the formation of the group. The Sumber Agung group emerged from community initiative and independence which was carried out informally and traditionally by the local community. There are no records, written regulations, and legal basis regarding the existence of the Sumber Agung Group, so they carry out spring management through this group only based on local communities. So it can be said that the Sumber Agung Group is an institutionally non-formal group because its existence has no legality. The preparation of members and systems to carry out governance of the Jomboran spring water sources is based on the results of the Sumber Agung Group's deliberations with the water-using community only.

Analysis of the Implementation Process of Water Utilization

Implementation is the next stage in a series of water source management processes. Implementation is the process of executing or implementing plans that have previously been planned. Implementation is concrete actions carried out as a real strategy in the form of programs to realize the objectives.

The implementation of management that occurs at the Jomboran spring is still ongoing according to the plans that have been prepared by the Sumber Agung Group. Starting with assistance from BAZNAS for the construction of drilled wells and storage tanks. The community and the Sumber Agung Group consider this assistance program to be very helpful

in managing the use of water from the Jomboran spring because it can help build a management system using drilled wells and storage tanks. The Sumber Agung group and several communities have made improvements to the flow of the spring by combining the water from the Jomboran spring with the water from drilled wells so that the water flow will be greater and the pipes can be channeled directly to each community's house. which is in Padukuhan Nglebak. With the help of drilled wells and reservoirs, the water use system becomes machine-based or no longer manual, so that the people who use it will be fairer, Eko said:

"By using machines, it is hoped that it will be fairer and more equitable according to their ability to pay, because they set it themselves" (interview with Eko, member of the Sumber Agung Group on December 14 2023)

The management of the Jomboran spring is still ongoing today and continues to be managed routinely with a maintenance strategy that resembles the PDAM system. The management can be said to be still as it is, with 2 water machines and 6 storage tanks, so there are still problems that occur due to the lack of tools to drain the water. Even so, it still helps manage the spring because it is no longer done manually but using a machine method, to make it easier for people to access the water. This development can be felt to this day in helping to manage the springs in Jomboran, using a machine method where usage is calculated per cube and the community pays according to the umbrella that has been determined based on a mutual agreement between the user community and the Sumber Agung Group.

The Jomboran spring water use system, after being managed by the Sumber Agung Group, uses a payment system, due to reimbursement of operational costs. The public is charged an initial fee for installing electricity meters of Rp. 400,000 – Rp. 1,000,000, then the community is charged a monthly fee of Rp. 3,000 per cubic and if more than 20 cubic meters are used the cost increases by Rp. 1,000 rupiah per cube. Sutikno said regarding this financing burden:

"This burden is the result of a mutual agreement, sir, we return it to the residents if they wish, and the result is that the community members are given better management, it doesn't matter," (interview with Sutikno, member of the Sumber Agung Group on December 14 2023)

Sutijo said that previously a reservoir was going to be built near the Jomboran spring in 2020 with the aim of storing water and increasing the flow of water that would be distributed to the community, but due to funding constraints, the construction was stalled until now. The researcher saw firsthand that the location where the reservoir was intended to be built was still abandoned, the obstacle was that the territorial conditions were quite difficult so heavy equipment was needed to build it, therefore cost was an obstacle to continuing the construction.

Water management that comes from the Jomboran spring is then channeled to the water storage tanks that have been built. The water distribution uses additional machines which are the result of assistance from a private institution called Caritas. Building storage tanks is one strategy to facilitate the flow of water to people's homes.

Data regarding the income received by the Sumber Agung Group as the manager of the Jomboran springs averages around Rp. 1,300,000 per month, then the biggest expenditure is for electricity funds which can cost Rp. 300,000 in just two to three days. Electrical power is indeed a sector that is a very large expense, besides that, maintenance must also be carried out regularly so that damage does not occur. This is because the water machine has to lift a very large amount of water to be distributed to a large number of people's homes.

In general, the commitments implemented at the planning stage are still ongoing today and are still being pursued. Public awareness of the importance of maintaining the function and usefulness of the Jomboran spring is the reason. Even so, there are still many obstacles faced in implementing Jomboran spring governance that have not yet been resolved due to the limited human resources and funding to carry out spring governance.

Analysis of the Utilization and Accountability Monitoring Process

The final stage in managing these springs is control. The aim of this control is so that the programs and strategies that have been planned and implemented can be carried out in accordance with the corridors that have been determined which are the objectives can be realized. Apart from that, control is a way to ensure that goals can be achieved long term and continuously so that they are not just momentary.

The Sumber Agung Group, as managers in maintaining the durability of water machines, implements a strategy for using water at the Jomboran spring, namely a schedule preparation system using an automatic timer to turn it on and off. The water will be distributed to the community at certain scheduled times, namely in the morning at 04.00 - 07.00 WIB, then in the afternoon at 11.00 - 14.00 WIB and finally in the afternoon at 17.00 - 19.00 WIB. The implementation of this schedule also aims to regulate and control water use so that it can be evenly distributed and at the same time maintain the machines and tools used in water source management.

If examined in terms of rights and obligations, the Sumber Agung Group has an obligation to distribute water to consumers and the consumer's obligation is to pay for what they have received. This is a balance to control the long-term management of Jomboran springs by implementing a mutualism system. Apart from that, openness and transparency are also enforced in the control of the Sumber Agung Group as a form of responsibility to the community. Eco says:

"If we are very open, just yesterday at the accountability report meeting we were transparent and invited others to become administrators, please be careful so you can feel the difficulties and pleasures of managing water, but they don't want to either" (interview with Eko member of the Sumber Agung Group on December 14 2023)

In carrying out governance control at the Jomboran springs, it is necessary to maintain public trust in management. Another program initiated by the Sumber Agung group administrators in the near future is to share gifts with all consumers of Jomboran water, the funds for which are set aside from the income obtained. This is an effort to provide reciprocity from the Sumber Agung group management to the community as water consumers.

The spring management carried out by the Sumber Agung group really maintains transparency and accountability in its management system, as evidenced by the fact that meetings are always held when there is something that needs to be done outside of the regular meeting agenda for management reporting, this is included in the control aspect. The accountability reports carried out are always open and very detailed, starting from the circulation of money coming in, balances, expenses to things that happen outside of the plan. The Sumber Agung group also makes regulations for the use of water by the community, one of which is that people who are in arrears in paying water money for more than three months will have their water cut off temporarily. This makes the water consuming community more disciplined and wiser in using water.

The management strategy carried out by the Sumber Agung Group is to carry out openness and communication in order to establish good relationships and build public trust as consumers in the managers of the Jomboran springs. The transparency aspect is strictly maintained as a form of accountability for the Sumber Agung Group management.

Regular discussion forums are always held by the management of the Sumber Agung group as an accountability for management transparency and as a means of building good relations between the management and the water consuming community. The Sumber Agung Group administrators also asked the community that even though a management group had been formed, this did not mean that the community could not play a role in management, but in fact the Sumber Agung Group administrators emphasized that the community must also play a role in management in order to achieve common goals. The Sumber Agung group administrators emphasized that if problems occur, they must be resolved together, both the managers and the water consuming community, and the Sumber Agung group administrators also emphasized that if trouble occurs and the community protests, it would be good to be accompanied by a solution.

This strategy has proven capable of being implemented to foster good relationships to minimize conflicts and foster a sense of trust among the water consumer community in the Jomboran spring management group. All funds that come in and become balances will later be returned to the community and mutually agreed on their use.

Based on the analysis of the management of the Jomboran spring which is run by the community in the form of the Sumber Agung Group, there is a non-formal and independent management model. Below is an infographic on the management model for common pool resources in the form of community-based springs in Katongan District to further clarify the management model implemented. The explanation is via infographics in the next section.

Management of Common Pool Resources Jomboran Springs In Katongan District

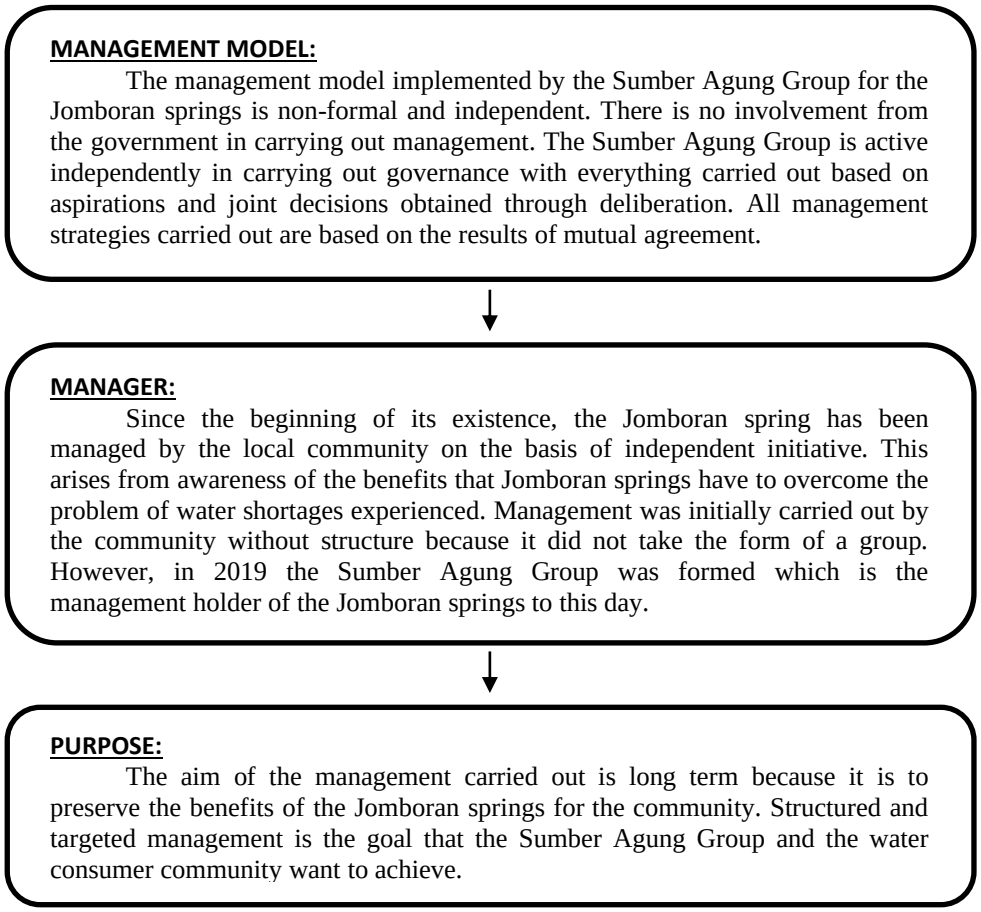

Figure.1 Common Pool Resources Management Model for Jomboran Springs in Katongan District

Based on the infographic presentation regarding the Jomboran spring common pool resources management model by the Sumber Agung Group in Katongan Village, it illustrates that the management carried out is based on the benefits of the Jomboran spring. The strategy implemented comes from the initiative and independence of the local community. There is a difference between the formal management model and the community-based common pool resources management model as is the case in Katongan District.

The difference lies in the management carried out in accordance with the desires and needs of the water-using community. Apart from that, the strategies implemented in management will not conflict with the community, especially water consumers, because all strategies implemented are the result of joint decisions. This makes management more controllable and in accordance with what is needed. Apart from that, funding will come from various sources, both government and private, so the allocation of funds will be greater because there are no limits on funding. Community-based management of common pool resources also makes implementation and control easier because it is run and monitored by the community itself.

CONCLUSION

The management of the Jomboran springs is fully managed by the community through the Sumber Agung management group. Based on the analysis in this research, it is concluded that the governance of the Jomboran springs in Katongan District has been running according to the indicators of governance theory to measure good and correct governance even in the current circumstances. These indicators are based on four aspects, namely planning, organizing, actuating and controlling.

Discussion and analysis show that these four indicators as an analysis lens for the realization of spring management have not been met in these four indicators due to conditions and due to community limitations in terms of authority and funding. Starting from planning indicators that do not yet have a written road map, then organizing indicators that do not yet have legality from the existing management group, then implementation indicators that have not been carried out optimally and finally to control indicators that are still carried out traditionally without an official legal umbrella. On the other hand, the government, especially the Katongan District government, has not played an active role in implementing water spring management, so there is no policy governing the management of these spring sources, which in the end is only carried out by the community. So the scheme that can be suggested is that in the future there needs to be intervention from the Katongan District government so that the common pool resources can have more impact on the wider community.

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