

Community Group Participation in Maintenance of Cengklik Reservoir as a Water Resources Conservation Area

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Abstract

Reservoirs are water resources that function for the needs of the community. Reservoir maintenance is carried out to maintain the conservation of water resources and inhibit sedimentation. This study aims to determine the participation of the Ngudi Tirta Lestari community group in Sobokerto Village in maintaining the Cengklik reservoir. This research uses the theory of community participation according to Keith Davis with 3 indicators: individual mental and emotional involvement, motivation to contribute, and individual responsibility. The method used is qualitative with a descriptive approach. Data collection is done by observation, interview, and literature study. The results of the study are Community Group Participation in maintaining the Cengklik reservoir as a water resource conservation area in Sobokerto Village is quite good. In individual mental and emotional involvement, community groups are aware of social activities and the important benefits of maintaining the Cengklik reservoir. The encouragement of contribution motivation, community groups received encouragement from the Sobokerto Village government and PT Pertamina Patra Niaga Adi Soemarmo through socialization and training activities regarding reservoir maintenance. However, there is still a lack of responsibility for reservoir maintenance caused by the collision of other individual activities, so it is necessary to hold bounding between members.

Keywords: Community Group Participation; Reservoir Maintenance; Water Resources Conservation; Water Hyacinth

INTRODUCTION

Reservoirs function as water storage containers to meet the needs or regulate the use of water used in the dry season. The artificial water reservoir arises due to a building in the form of a pile of soil, concrete, and stone built to accommodate and hold mud, mine waste, and water so that it becomes a reservoir. Government Regulation Number 37 of 2010 concerning Reservoir Dams, namely reservoirs have benefits, among others, as a means of irrigation, hydropower (Hydroelectric Power Plant), Raw Water Supply, Fish Cultivation, Tourism, Water Sports, and Flood Control.

Cengklik Reservoir is one of the reservoirs located in Boyolali Regency,

precisely in Sobokerto Village, Ngemplak District. Cengklik Reservoir was established during the Dutch Colonial period in 1923-1931 to fulfill the water needs of the Colomadu Sugar Factory. Since 1998 until now, Cengklik Reservoir has had a very important role in the surrounding area, especially as a source of irrigation for rice fields. The area of the Cengklik irrigation area (DI) in normal numbers is 1,570 hectares and the Cengklik dam has a storage capacity of 9.16 million m³. The volume of water in the Cengklik Reservoir is currently experiencing a very drastic decline, located at 6.94 million m³ far from the normal volume of effective water in the Cengklik Reservoir (Dam Water Availability Data as

of December 2022 Central Java PUSDATARU Office).

According to Lolitha (2018), the decrease in water availability of the Cengklik reservoir was caused by several problems that occurred in the reservoir, such as the condition of the worn drainage pair, landslides on the slope of the delivery channel, seepage on the downstream slope, damage to the hydromechanical door, reservoir sedimentation conditions and wild plants in the form of water hyacinth. The government's intervention to overcome these problems led to the decision to include the rehabilitation of the Cengklik reservoir in the 2010-2014 Medium-Term Development Action Plan. The reality is that the infrastructure improvements made by the government in 2014 did not last long, in 2016 the same situation as in 2010 was experienced again by the Cengklik reservoir. Problems and damage to the Cengklik Reservoir affect the decrease in water volume and water availability for irrigation of community rice fields.

The Ministry of Public Works and Public Housing (PUPR) is again carrying out revitalization and rearrangement in the Cengklik reservoir area which will begin in December 2021 until the end of 2022, with the assistance of the Bengawan Solo River Basin Agency (BBWS) as the administrator of the Cengklik Reservoir. Revitalization is carried out because Cengklik Reservoir is in the unhealthy category, this is due to the large number of stalls that stand on the dam and there are tidal farming activities by the surrounding community. The decline in conditions and damage that occurred in the Cengklik reservoir resulted in the service and performance of the reservoir weakening, this was also influenced by the old age of the building. The revitalization activities are carried out to optimize the main function of the dam, namely as a water storage container and also as a means of irrigating rice fields. Not only from government factors, community participation is also important in efforts to maintain the Cengklik reservoir. This is intended so that the revitalization that has

been worked on can be felt by the community and related parties for a long time. According to Hendra and Donie, (2020), the success of a development will be realized when the implementation of development activities involves the community to participate. Participatory reservoir maintenance aims to bring back the sense of ownership of the reservoir to the community. Community participation is needed so that public policies that are launched are right on target to meet the needs of the community.

Ngudi Tirto Lestari is a Community Group (POKMAS) of Sobokerto Village, Ngemplak District, Boyolali Regency formed by the Bengawan Solo River Basin Center (BBWS-BS). The formation of the Ngudi Tirto Lestari Community Group was based on a follow-up to the "Socialization of Cengklik Reservoir Community Empowerment" event held by the Bengawan Solo River Basin Agency (BBWS-BS) through the Operations and Maintenance Division. The event was held at the Sobokerto Village Hall Office in November 2020. Through the formation of community groups from various backgrounds, it is hoped that it can create a community perception that they are not only limited to water users but also responsible for and contribute to caring for water resources and the Cengklik reservoir area as sustainable water conservation.

The Bengawan Solo Natural Resources Operations and Maintenance (OP) Division in October 2022 again held an activity "Training on Institutional Strengthening of the Cengklik Dam Community Group" regarding sedimentation mitigation and reservoir safety based on community participation and participation. Pokmas is intended to have a sense of care and knowledge in maintenance to reduce damage to reservoirs.

Water resources based on Law No. 7 of 2004 article 83 states that the community is the holder of water use rights and has an obligation to pay attention to the public interest which can be realized by participating in the conservation of water

resources and securing and protecting water resources infrastructure. The community has a role not only as an audience for the implementation of development carried out by the government, but the community also has an obligation to maintain the surrounding water resources. Wahyu's research (2022) on Structuring the Greenbelt Area to Develop Tourism Potential at Cengklik Reservoir, Ngemplak, Boyolali, states that there is a tendency for the impact of land management in the Cengklik reservoir to be less organized, such as the establishment of stalls above the dam body arena, tidal agricultural activities, and floating net cage (KJA) fishery activities to cause increased sedimentation, thereby reducing water capacity and resulting in a shift in the main function of the Cengklik reservoir as a water resource area. Based on the background of the problem, this research aims to find out how the participation of community groups in the maintenance of the cengklik reservoir as a water resource conservation area so that these resources remain sustainable.

METHOD

This article is based on field research conducted in 2023 at the Ngudi Tirto Lestari Community Group in Sobokerto Village. The approach used in the research is qualitative with descriptive methods. In this study, there were informants as many as 6 active members of the Ngudi Tirto Lestari community group, consisting of the Chairman, Secretary, Treasurer, Sie. Demplot, Sie. Marketing and Sie. Production. The determination of informants was carried out using a purposive sampling technique, namely sampling through certain considerations by taking informants who have knowledge in accordance with the research context. Data collection was carried out in the form of semi-structured in-depth interviews. Interviews were conducted informally at the right time and adjusted to the circumstances of the research informants.

RESULTS AND DISCUSSION

Overview of Ngudi Tirto Lestari Community Group

Cengklik reservoir is one of the water storage dams located in Sobokerto Village, Ngemplak District, Boyolali Regency with its main function as a means of irrigating the surrounding community's rice fields. Geographically, Sobokerto village has an area of 497, 4415 Ha with a population of 6654 people spread over 8 RW and 32 RT. Sobokerto village has a strategic location between the Semarang-Solo route and adjacent Adi Soemarmo Airport. The potential of Sobokerto village through the existence of the Cengklik reservoir is very diverse, besides being used to irrigate rice fields, the Cengklik reservoir is also used by the community for fishing and tourism.

The reservoir, which was built during the Dutch colonial period in 1931 as a water supply for the Colomadu sugar factory and since 1998 has been converted to irrigate the community's rice fields, has now experienced a drastic decrease in volume. Judging from the volume of Cengklik reservoir water, which has decreased by - 2.22 million m³ from the normal water volume of the Cengklik reservoir, which is 9.16 m³. To maintain the function of the Cengklik reservoir, through the Bengawan Solo River Basin Center and the village government apparatus of Sobokerto Village, a Community Group was formed which aims to maintain the Cengklik reservoir as a water resource conservation area. Ngudi Tirto Lestari Community Group is a POKMAS that operates in Sobokerto Village with the main location of the Cengklik reservoir. Ngudi Tirto Lestari POKMAS was established in 2020 with 19 active members spread across Sobokerto village.

The formation of community groups aims to form an understanding that the community not only plays a role as a water user but also has rights and obligations in contributing to and maintaining water resources and the Cengklik reservoir environment. The community began to feel uneasy about the water hyacinth plants around the Cengklik reservoir, which prevented fishermen from fishing and the

boats used to fish became difficult to enter the middle of the reservoir because they were blocked by water hyacinth on the edge of the reservoir. Existence of this, POKMAS Ngudi Tirto Lestari together with the village government of Sobokerto collaborated with a 3rd party to help

manage the water hyacinth. As of 2022, PT Pertamina Patra Niaga DPPU Adi Soemarmo became a Stakeholder and POKMAS Ngudi Tirto Lestari is a fostered group of PT Pertamina which is engaged in managing water hyacinth into plant fertilizer and portable biogas.

Table 1: Organizational Structure of Ngudi Tirto Lestari Community Group Sobokerto Village

No	Name	Position	Address
1	Surahmin	Protector	Turunan
2	Suparmo	Advisor	Turunan
3	Turut Raharjo	Chairman	Turunan
4	Atit Nur Aryana	Secretary	Turunan
5	Hartono	Secretary	Turunan
6	Titik Lesnaningsih	Treasurer	Turunan
7	Sri Handayani	Treasurer	Jatisari
8	Wagino	Production Department	Turunan
9	Suparno	Production Department	Ngoncan
10	Sutarman	Production Department	Turiban
11	Dalmanto	Demplot Department	Turiban
12	Sadiman	Demplot Department	Turiban
13	Pitoyo	Marketing Department	Gelaran
14	Sarindi	Marketing Department	Turunan
15	Erna Pujiatuti	Consumption Department	Turiban
16	Warsiki	Consumption Department	Cengklik
17	Wakiman	Documentation Department	Tempel
18	Biso Warno	Documentation Department	Turunan
19	Waluyo	Documentation Department	Turiban

Individual Mental and Emotional Involvement

The mental and emotional involvement of the Ngudi Tirto Lestari community group in reservoir maintenance is expected so that community members take part in the implementation of activities that have been launched and also provide responses to community group activities that have been launched, such responses as approving or rejecting. The response or response from community members can be seen that there is a response, desire, and strong awareness from within community group members to participate in reservoir maintenance, especially in the water hyacinth management program.

The response of Pokmas members in the activities that have been launched is very diverse, as explained by Mr. Turut Raharjo as the Head of Pokmas Ngudi Tirto Lestari where the involvement of group

members is good, they are not only physically involved but also spiritually involved. So that Pokmas members have involvement in mutual respect, appreciation, and tolerance. Mr. Dalmanto as a member of the Pokmas Demplot Department explained the same thing about the response of Pokmas members regarding the activities carried out by Pokmas, he participated in Pokmas activities because he was also a victim of the siltation of the reservoir that occurred. As farmers, with the existence of Pokmas, they can utilize their knowledge in reservoir maintenance by removing weeds, namely water hyacinths in the reservoir. Then for farmers, the existence of Pokmas also helps in the use of organic fertilizers which are more efficient and environmentally friendly compared to chemical fertilizers.

Community participation is intended to involve individuals or community groups

incorporated at the implementation stage of a program or project that has been launched. Society during its lifetime must experience dynamic changes, changes in a direction that is liked or disliked, and changes in fast or slow motion by individual communities. The mental and emotional involvement of individuals in participation is more than physical involvement. Therefore, mental and emotional involvement cannot be forced or mobilized, so it can be said to be autonomous. In this case, Pokmas has a strong motivation to participate in the maintenance of Cengklik reservoir as a water resource conservation area through water hyacinth management activities.

The mental and emotional involvement of Ngudi Tirto Lestari Pokmas members based on research that has been conducted by researchers, shows the results that Pokmas members agree and support the reservoir maintenance activities carried out by Pokmas. The community group and the government have good communication and full support. In addition, there is a monthly meeting conducted by the community group to strengthen communication between members. In the meeting, the community group discusses the activity plan that will be carried out as well as the progress or obstacles found in the field during the community group activities. With these meetings, it is expected that there is a sense of belonging and kinship among the members of the community group.

Motivation Encouragement Contribution / Willingness to Contribute

The results of the motor drive indicator in the maintenance of the Cengklik reservoir are that Pokmas Ngudi Tirto Lestari members have an awareness of motivating themselves and have the initiative to participate in carrying out Pokmas activities in water hyacinth management whose presence disturbs the condition of the reservoir waters. The motivation for Pokmas' contribution so far has come from individual awareness, and communication with the Sobokerto village government and stakeholders, namely PT Pertamina Patra Niaga Adi Soemarmo

Aircraft Refueling Depot (DPPU). With this, Pokmas has a forum to convey suggestions related to reservoir maintenance in water hyacinth management, so that the activities carried out are not only one-way.

The Sobokerto village government encourages the motivation of contribution or willingness to make donations to Pokmas Ngudi Tirto Lestari through participation in activities carried out by Pokmas. In addition, the Sobokerto Village government facilitates Demplot or land that can be used by Pokmas to test organic fertilizer processed from water hyacinth. The Sobokerto Village Government also has a position as a protector and advisor to Pokmas, so the relationship between the Village Government and Pokmas is two-way. Problems that exist in Pokmas are always communicated with the Village Government and always get a solution or solution that can be well received. The village government often participates in activities carried out by Pokmas, such as the management of water hyacinth into organic fertilizer or biogas and the gathering or socialization activities carried out by Pokmas.

PT Pertamina Patra Niaga Depot Aircraft Refueling (DPPU) Adi Soemarmo as a stakeholder also provided motivation to Pokmas in the form of donations and socialization of activities. Stakeholders donated tools used to process water hyacinth into organic fertilizer and biogas. The tools are water hyacinth fermentation collection drums, water hyacinth choppers, wheelbarrows, and bottles used to pack organic fertilizer products. PT Pertamina Patra Niaga provides assistance to the Pokmas Ngudi Tirto Lestari climate village program to increase the capacity of Human Resources through comparative study activities carried out at Proklam Lestari Sruni Village, Musuk District (Boyolali Regency's Highest Proklam Predicate in 2022).

The driving factor for the motivation of Pokmas' contribution to maintaining the Cengklik reservoir in water hyacinth management is the problem of water hyacinth plants covering almost $\frac{3}{4}$ of the reservoir surface. As a weed, water

hyacinth is one of the sedimentation factors, causing the reservoir water discharge to decrease and affecting the irrigation of rice fields around the Cengklik reservoir. In addition, fishermen are also harmed by the presence of water hyacinth which inhibits fishing boats.

The results of the research on the indicator of motivation for contribution/willingness to contribute prove that the Ngudi Tirto Lestari Community Group has participated in the maintenance of the Cengklik reservoir as a water resource conservation area through water hyacinth management which is used as organic fertilizer and portable biogas. Pokmas Ngudi Tirto Lestari, which comes from various community backgrounds, continues to improve water hyacinth management training to get better results. Social activities carried out every 2 weeks for water hyacinth processing and once a month for routine gatherings strive to create a beautiful and sustainable Cengklik reservoir environment for the community.

Individual Responsibility

The research results of the responsibility indicator in community group participation in maintaining the Cengklik reservoir as a water resource conservation area, namely Pokmas members have a sense of responsibility that is quite good. There is a demand as a Pokmas member to obey and follow every activity that has been planned as a Pokmas work program. Pokmas members are aware of their existence as social volunteers engaged in the community so the activities carried out also have a positive influence on the community. Based on the findings in the field, Pokmas initially had 30 members but over time the active members of Pokmas are now 19 people. The decline in active Pokmas members is due to the conflict with other activities, so many Pokmas members can no longer join Pokmas.

To foster a sense of responsibility as a member, Pokmas Ngudi Tirto Lestari makes a rule that every member who does not take part in the monthly routine meeting for 3 consecutive times without confirmation will be given a warning letter.

This is enforced to build a sense of responsibility so that each member has a sense of ownership as a family in Pokmas Ngudi Tirto Lestari. It is hoped that each community member can work well together for the maintenance of the Cengklik reservoir.

The head of Pokmas Ngudi Tirto Lestari continues to encourage the spirit and responsibility of his group members. Where the activities carried out are social activities or can be said to be volunteers, the existence of individual responsibility is important. The individual responsibility of Pokmas Ngudi Tirto Lestari can be seen from the results of water hyacinth processing activities, namely organic fertilizer and portable biogas which are produced every 2 weeks. The production site for organic fertilizer and portable gas from water hyacinth is located in Turiban hamlet on the edge of the Cengklik reservoir. Each community member has their own duties, it is also used as a mandate for each member to have an attitude of responsibility towards Pokmas.

CONCLUSIONS

The participation of the Ngudi Tirto Lestari Community Group in maintaining the cengklik reservoir as a water resource conservation area in Sobokerto Village is quite good. According to Keith Davis, participation is the mental and emotional involvement of individuals towards the motivation to contribute and take responsibility in planned activities. Thus, in Ngudi Tirto Lestari community group participation has three elements, namely: First, Individual Mental and Emotional Involvement. Pokmas members have quite good participation in the Cengklik reservoir maintenance program where the community provides support and has a strong desire to create a beautiful reservoir environment.

Second, Contribution Motivation/Willingness to Contribute. The motivation of Pokmas members comes from internal and external sources, where Pokmas members always provide motivation to continue to maintain a sense of kinship and a sense of belonging among Pokmas members.

External parties such as the Sobokerto Village Government and PT Pertamina Patra Niaga Depot Aircraft Refueling (DPPU) Adi Soemarmo as stakeholders also provide socialization to Pokmas regarding the maintenance of the Cengklik reservoir, especially in water hyacinth management. The responsibility of the members of the Ngudi Tirto Lestari community group is still lacking, this is due to the decline of Pokmas members from 30 members now only 19 active members remain. The lack of member responsibility is caused by community members who have other interests, making it difficult to equalize the schedule of Pokmas activities with personal interests. So it is necessary to hold bonding between Pokmas members regarding their responsibilities as a community group.

SUGGESTIONS

There is a need to increase the participation of community groups in the maintenance of the Cengklik Reservoir as a water resource conservation area. So that the Cengklik reservoir is maintained and has a positive impact on the community. A sense of responsibility and belonging among community group members can be supported by family activities outside the previously planned work program.

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