

The Role of Local Communities in Overcoming River Pollution in Peliatan Village

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ABSTRACT

Environmental pollution is a common problem that often affects an area. One of them is river pollution. River pollution also occurred in Peliatan Village. The condition of one of the rivers, namely the Mas River, was once used as a landfill or TPA. The role of the community in helping to overcome pollution problems is an initial step that can become a foundation in overcoming river pollution problems in Peliatan Village. In Bali, the existence of community groups is still closely felt, especially in overcoming and finding a problem. Local community groups have a major role in providing aspirations for the progress of their region. The theory of community empowerment and community-based development is the theoretical basis for implementing this research activity. The quality of the riverside space is measured from the indicators of the quality of the waterfront space according to Sutrisno (1997) and is presented descriptively. Research using qualitative methods with case studies and using observation and interview techniques. This method is used to be able to understand and discover phenomena in the field in depth. The results of the study showed that the condition of the river before handling river pollution was that its banks were filled with garbage and made into a landfill. The condition of the river afterward is that the river becomes clean, orderly and made more attractive with the addition of wall carvings and sculptures. The reappearance of the bad debt tradition and visits from outside the area to Peliatan Village. The role of the community as the dominant role and in collaboration with the Service Village and Traditional Village. Contributions from local communities both in terms of ideas, ideas and material as an important capital in overcoming problems in their area. This capital will be very useful for development in villages or cities.

Keywords: community-based development; local communities; overcoming river pollution; riverside areas; Peliatan Village.

INTRODUCTION

Bali Provincial Government Regulation Number 4 of 2005 concerning Control of Environmental Pollution and Destruction states that environmental pollution and destruction can affect and reduce the function and quality of the environment. Control of environmental pollution and destruction is based on preserving environmental functions by upholding community participation and the values of Tri Hita Karana. Article 4 also states that the community has equal opportunities to participate in controlling environmental pollution and/or destruction. In a research conducted by the Bali Partnership, an organization dedicated to research on marine waste pollution, it was shown that waste production in Bali reaches 4,281 tons per day and 11% of it flows into the sea. This was conveyed at a meeting at the Bali Governor's Office on June 20, 2019 (Mongabay, 2019). Research results from the Bali Partnership found that there are 3 main causes for the large amount of waste flowing into the sea, one of which is the proximity of settlements to water, such as lakes, coasts, and rivers. This is an important concern why a lot of garbage is washed into the sea (Mongabay, 2019). Garbage that is thrown carelessly into the river is very risky to the quality of life, the environment, and water quality.

River pollution caused by waste dumped carelessly into rivers is a problem that needs attention. One of the rivers in Peliatan Village, namely the Mas River, is also experiencing pollution. Based on information from residents, the river area zone called Tukad Mas had become a final waste disposal

site or TPA. This condition was also published in the Bali Tribune which was published on 12 November 2020 written by journalist Mr. I Nyoman Astana. the Tukad Mas area has now undergone a change in the arrangement of its river banks. The riverbanks, which were originally used as garbage dumps, are now in order and the community no longer throws garbage into the Tukad Mas river.

The community's concern and role for the surrounding environment is an important step in overcoming environmental problems, especially river pollution. Cooperation between communities is very closely seen in Indonesia, especially in Bali. In solving problems in their own area, cooperation between communities in Bali is still close and carried out. Collaboration between community groups is carried out in mutual cooperation activities, social activities to religious ceremonies. The existence of community groups such as banjar members, PKK members and youth and women's groups have their own role in being a solution to solving problems such as river pollution in Peliatan Village. This research will discuss how the initial condition of the polluted river is then how the condition is after handling the pollution and the role of the community in finding and overcoming river pollution problems in Peliatan Village.

RESEARCH METHODS

The research used a descriptive qualitative method with a case study approach and was located on a river in Peliatan Village, Ubud District with data from the last five years. Data collection techniques used in qualitative research are observation, interviews and documentation. The stages carried out in the research include inductive analysis with explorative, comparative and descriptive techniques. Comparative techniques produce comparisons of conditions before and after handling river pollution and descriptive techniques analyze the role of local communities in overcoming river pollution problems.

Territory Overview

The research location describes and explains a location or place where research is carried out. The research is located in Peliatan Village, precisely on the river or what is called a tukad, namely Tukad Ulun Pangkung and Tukad Mas. These Tukads are pioneers in river management which is carried out to improve the environmental quality of waterfront spaces in Peliatan Village. The length of Tukad Ulun Pangkung is 66.51 m and Tukad Mas is 226.74 m long. Peliatan Village is one of the villages that is aggressively restructuring the river which is carried out in stages consistently until it is included in the village program as a solution to overcoming the problem of river bank pollution.



Figure 1. Map of River Locations in Peliatan Village (Observation Results, 2022)

Data collection

Mamik (2015) states that the data collection techniques used in qualitative research are observation, interviews and documentation. The target of researchers in making observations namely; 1) Locations are river objects in Peliatan Village including the Ulun Pangkung River and the Mas River which are located in Banjar Teges Peliatan Village. These two rivers were chosen because the arrangement that had been completed was the condition of the river which was starting to look clean and attractive; 2) Space, namely public space and green space in the research object that focuses on observing spatial planning on the riverbanks of the Ulun Pangkung River and the Mas River; 3) Actors or humans, namely people who are active and people who have a place to live in the environment of the research location. The technique used by researchers in observation is participatory observation techniques where researchers are involved with the daily activities of people being observed or used as a source of research data (Sugiyono, 2015). The second data collection was conducted through interviews with informants, namely the Head of Peliatan Village, Kelihan Adat Banjar Teges Yangloni, Chair of the Community Self-Reliance Agency, Chair of PEGO (Peliatan Go Green), community leaders and the village community. The technique used by researchers in observation is participatory observation techniques where researchers are involved with the daily activities of people being observed or used as a source of research data (Sugiyono, 2015). Documentation in the form of taking photos, videos and sound recordings that can assist researchers in processing data as complete as possible and can be described clearly. The results of the documentation are then summarized and selected according to research needs.

Analysis Techniques

The analysis used is inductive. Data analysis aims to make connections between one data and other data, then draw common threads from these data so that a complete picture of a phenomenon is studied in depth (Nashudien, 2012). The data obtained were analyzed using explorative, comparative and descriptive techniques. Explorative analysis for the first research objective is to identify the condition of the river where data is obtained from interviews and village documents. Comparative data analysis techniques to determine differences in conditions before and after treatment. Descriptive analysis to explain the role of local communities where the data obtained from interviews. The results of the analysis of research data are then presented in the form of descriptive narratives with the presentation of text and image narratives. The presentation of this information is in the form of an explanation of the conditions before and after handling river pollution in Peliatan Village. Drawing conclusions based on an in-depth analysis of the data that has been obtained so that it can answer the formulation of the research problem.

RESULTS AND DISCUSSION

River Condition Before Handling River Pollution

The condition of the river in Peliatan Village before handling pollution was the condition of one of the rivers named Sungai Mas which was polluted as a result of dumping residents' garbage into the river area. Based on information from local residents, the river area zone called Tukad Mas had become a final waste disposal site or TPA. This condition was also published in the Bali Tribune which was published on 12 November 2020 written by journalist Mr. I Nyoman Astana. Based on the results of interviews with informants, the environmental cleanliness of Peliatan Village still needs to be considered considering that Peliatan Village is one of the tourist villages in Ubud District.



Figure 2. Initial Conditions of the River Before Arrangement (Document of Peliatan Village)

The picture above shows the condition of a river that is polluted by garbage such as garbage from households that can be seen piling up on the banks of the river. Based on interviews, before handling river pollution, residents also found waste such as mattresses and used clothes that were thrown into the river. This ensures that the waste that is thrown into the river is waste and used goods that come from local residents who throw it into the river. The picture also shows the condition of the riverbanks that are not organized and difficult to access.

River Condition After River Pollution Overcome

Community activities in overcoming river pollution problems have shown the expected results, namely the condition of rivers in Peliatan Village which are increasingly clean and orderly. Measured from the quality indicators of the riverside area which consists of 5 (five) indicators, namely public attainment to the water's edge, environmental cleanliness, the level of attractive vista availability, the level of water utility and the level of air comfort shows the condition of the river after handling pollution which is shown in the table as follows:

Results of Comparative Analysis of Physical Conditions of the River

Public Access to Water



Figure 3. Condition of the Bulakan Tirta Mas River before the arrangement was carried out

Before the river was reorganized to overcome river pollution, the approach to the river looked like in the picture above, which was not considered safe and still used land made like stairs. This condition is very unsafe if the weather is rainy and if it is passed by children and the elderly.



Figure 4. Condition of River Reaches after Arrangement is Done

After landscaping, access to the river becomes safer, neater, and easier to access. Apart from being safe because it uses pavement for stairs, access also has aesthetic value from the walls and rocks. Pavement has also been made on the banks of the river so that water can flow optimally

Environmental Cleanliness

The polluted river environment makes the river clean and dirty. This condition makes residents participate in cleaning the river through river planning. The condition of the river is starting to look clean. The river has become neater and more orderly, where previously it was filled with rubbish on the banks. The river bank is also a comfortable place for residents' activities such as washing and fishing.



Figure 5. The condition of the river is clean and residents' activities are starting to be seen

Water Utility Level

Previously, all drainage was directed to the river, but after the activities were carried out, drainage was not allowed to be discharged into the river, the river was for toilets and no household waste was discharged into the river.

Attractive Vista Availability Levels



Figure 6. Physical condition of the river without artwork

Added artwork to the river after arrangement, such as animal-shaped statues and wall carvings. Previously there was no artwork so at that time the river did not have any interesting objects.



Figure 7. Added Artwork to the River

From figure 7 it can be seen that many animal statues have been added such as turtles and lizards which are part of the ecosystem that lives in the river. This can suggest maintaining the ecosystem as an environmental balance by not destroying the river like throwing rubbish carelessly, which was previously done.

Air Comfort Level



Figure 8. Residents who are comfortable doing activities on the river

Figure 8 shows how residents are starting to feel comfortable doing activities on the river. The condition of the river, which was previously polluted with dirt and lots of rubbish, is now clean, making it comfortable for residents to bathe, fish and play in the water. The clean atmosphere and beautiful trees provide clean and cool air.

Based on a comparative analysis before and after the arrangement of rivers with 5 (five) quality indicators of waterfront areas, it was found that from the first indicator public access to the banks where there was an update on access was given pavement so that it became safer and easier to access. The second indicator is the cleanliness of the environment where previously the banks of the river were filled with household waste, after the arrangement they became clean and had an impact on the

comfort of residents who were active in the river. The third indicator is the availability of an attractive vista which involves ideas and creativity from people who have skills in the field of art and sculpture so that the arrangement activities display sculptures and wall carvings. The fourth indicator is the water utility level where previously the residents disposed of waste into the river but after restructuring the community was not allowed to dispose of waste and drainage into the river. The fifth indicator is the comfort level of utilities seen from the activities of the river residents who like to linger for a long time bathing, fishing and children playing in the water indicating a comfortable atmosphere and good air.

After the activity of handling river pollution through river management, there were visits from outside agencies and outside the region related to tourism visits and reviews of environmental management in Peliatan Village. Peliatan Village which is the object of a comparative study that can be used as an example in agencies and regions that make visits to Peliatan Village. The visits included visits from the Bangli Tourism Office, the Ministry of National Development Planning, visits from the Gianyar Regent and the Village Government of Batu Engau District, East Kalimantan.



Figure 3. Visits from the Bangli Tourism Office (left), Ministry of Bappenas (center) and Visit from the Regent of Gianyar (right) (Peliatan Village Document)

The re-emergence of the local tradition of *ngutang mala* which had not previously been implemented for a long time, after the river arrangement was implemented, it could then be held again. The tradition of *ngutang mala* is a tradition carried out during wedding ceremonies in Peliatan Village. The meaning contained in it is the cleansing process for the groom and bride before carrying out the cleansing ceremony. This tradition is carried out in the river, so that the river being clean and orderly has an impact on the continuity of the *ngutang mala* tradition in Peliatan Village.



Figure 4. Procession of the Ngutang Mala Tradition in Peliatan Village

The Role of Local Communities and Parties Involved in Overcoming River Pollution Problems

The parties who play an important role in this activity are the community together with community leaders, village officials and traditional villages. Community figures as providers of ideas and suggestions for overcoming pollution problems by structuring rivers. The community figures referred to are not from those who hold office but anyone who is willing to provide input and ideas

and is trusted to mobilize the community to achieve the goal of a clean river and can again be of good benefit to the residents. The community figure as the giver of ideas and thoughts is the head of an organization called PEGO or Peliatan Go Green, which is a group of individual organizations formed voluntarily for the benefit of environmental cleanliness in Peliatan Village. The next community figure is a person who works as a tour guide who then holds the position of Village Head so that the community's aspirations can be conveyed. However, the community has a dominant role in achieving the goal of overcoming river pollution.

Based on interviews with sources, river cleaning activities have been carried out sporadically by a handful of people who long for the function of rivers in the past to relieve fatigue, bathe and play with children. This activity then began to be seen with the *rurung* festival which was an activity pioneered by village youth located on one of the rivers in Peliatan Village, namely the Beji Belong River. Activities located on the river provide encouragement to clean, organize and beautify the river which then continues to other rivers. From the *Rurung* festival, people began to reorganize other rivers such as the Ulun Pangkung River and the Mas River. By involving the community and seeing the potential of carving art, the river arrangement was carried out by adding something interesting and accommodating the community's interests and talents. The addition of wall carvings and statues on the banks of the river gives an attractive impression once the river is clean from river pollution.

The role of the Village Service here is to support the implementation of activities by helping to facilitate and accommodate activity needs. Seeing that these activities could lead to better development of Peliatan Village, the Village Service then incorporated the activities into village programs and synergized with the Traditional Village. Traditional Villages play a role in directing the community to coordinate the community and issue regulations to prevent violations that could pollute the river. In order to maintain environmental cleanliness, traditional etiquette issues *awig-awig* (rules) for violators who throw rubbish carelessly, as stated in the *awig-awig* of Peliatan Pavos 29 Village, namely a fine of 25 kg of rice and sanctions for carrying out traditional cleaning ceremonies for areas that are polluted. Rivers, which are natural objects, cannot be completely controlled, so they require regular maintenance and cleaning, especially after rain which brings rubbish from upstream rivers. There are sanctions made by Traditional Villages as an effort to prevent river pollution again and maintain the sustainability of river cleanliness.

There is good cooperation between communities to overcome the problem of river pollution by cleaning and structuring the river. Residents are involved and help both in terms of donating ideas, and materials and providing food, such as PKK women who also provide food for residents who work together.



Figure 5. Enthusiastic Community Working Together and Distribution of Porridge Consumption Made by PKK Women (Peliatan Village Document)

Collaboration between communities and village officials including Service Villages and Traditional Villages plays an important role so that it can be appreciated and given opportunities by the local government. If studied with community-based development, the process of improving

environmental quality in riverside areas is as follows; 1) Public Participation, namely the community is armed with small ideas and then realizes that changes to the environment in which they live will be effective if there is cooperation between fellow community members. In this case, the community is invited to play a role in improving the quality of the environment on the riverbank; 2) Community Education, namely Peliatan Village has a community organization developed by pioneers or what are also called vanguards. These pioneers formed community organizations working in the field of environmental cleanliness. Awareness of environmental cleanliness has become a phenomenal movement towards cleanliness by also educating and involving residents; 3) Sustainability, namely efforts to improve the quality of the waterfront environment that the community hopes will be realized well, of course its sustainability is also directed through outreach from various parties ranging from individuals to groups with the aim of sustainable education.

In the planning stage, 7 (seven) stages of community empowerment are analyzed, namely; 1) Planning/Preparation: In this stage, the community determines which figure will be the driving force in implementing the river arrangement and determines which rivers will be arranged, namely rivers in priority 1 and 2; 2) Assessment, in which the assessment process is used to identify perceived problems and available resources; 3) Alternative Program Planning to determine the solutions faced and determine alternative solutions to problem solving in river management activities; 4) Formulating an action plan means adapting the initial concept of activities to the needs and resources available. In this section the proposal formulation stage also appears which takes place in two directions with the community and government; 5) Implementation of the program or activity is the stage at which structuring activities begin by cleaning and structuring the river with the aim of bringing back the existence of the ancient river as a children's play space and an activity for residents to simply unwind; 6) Evaluation is the stage of assessing deficiencies that need to be considered in activities and becomes a guideline such as issuing rules or sanctions for those who violate and pollute the environment; 7) Termination is the final stage where an activity is expected to end, but unlike this activity, ongoing maintenance is required to ensure the river bank remains clean and maintained.

In the implementation stage of this activity there are activities that go according to plan and outside the plan. Activities that are according to the plan according to the availability of funds, namely the first priority, include rivers on the east side of Jalan Raya Cok Gde Rai, namely the Ulun Pangkung River, the Bulakan Tirta Mas River, the Beji Mas River and the Mas River. The second priority is the rivers on the west side of Jalan Cok Gde Rai including the Beji Belong River, Tirta Tawar River and Beji Pura River, Puseh Village. Of the rivers in the first and second priorities, there are 6 (six) rivers being worked on, including the Ulun Pangkung River, Bulakan Tirta Mas River, Beji Mas River, Mas River, Tirta Tawar River, and Beji Belong River. Implementation that goes beyond the plan means there is work that was originally planned to be carried out by the community but in reality requires professional staff. There is also a spontaneous role from the community who supports the ongoing river planning activities, both material donations and service donations from PKK women who distribute food to residents who are carrying out activities. The addition of creative ideas for carvings and statues initially follows people's artistic tastes and then follows available funds without reducing the artistic value.

Obstacles and Solutions

Obstacles encountered in river management activities include; 1) funding, where limited funds make the materials adapt to funds. The positive impact is that it triggers people's creative ideas and ideas for submitting proposals; 2) Disagreements of Opinion, namely differences in views that require the community to reach a consensus process and be based on the principles of customary law, namely the principle of harmony, the principle of fairness and the principle of harmony; 3) Implementation that is not planned, where funds are adjusted so that there is work that would previously have been carried out by the community but in reality requires professional assistance to make a springboard that prioritizes strength and durability as a support for the river wall.

Recommendations for implementing activities in other places include important points obtained from the research results, namely; 1) Be aware of the image of a village or city, in this case Peliatan Village, which is an Arts and Culture Tourism Village, is aware of the importance of art and culture which is the attraction and potential of Peliatan Village so that its activities are based on artistic and

cultural considerations and are seen as successful in fostering a sense of belonging to participate in activities; 2) Getting to know the potential of natural resources and natural resources is an important part of community empowerment. Human resource potential such as professions, interests and talents are points that need to be recognized in order to create a strong impetus for the development of a village or city. The experience, level of education and profession of individuals in an area are expected to be able to contribute ideas, ideas and positive views for the advancement of village or city development and with appropriate implications; 3) Seeing Opportunities from the Regional Government, from this point it is an active manifestation of the community's role in seeing the opportunities that exist in the government so that they can realize ideas and be in line with the targets of the regional government which can be an opportunity to submit activity proposals so that they can be supported by the regional government.

CONCLUSION

Local communities as the initial foundation in development in a village. Pollution that hit the river in Peliatan Village is a common problem that also occurs in many other areas. The role of society to be more concerned about the environment and aware of cleanliness is a pattern that must be instilled in every individual. The activity of overcoming river pollution through river management is a form of the aspirations of the people of Peliatan Village in protecting the environment. This activity succeeded in making the river cleaner and has aesthetic value. The role of the community, both in the contribution of ideas, energy and materials, is the main pillar so that this activity can be carried out and covered by funds from the government. The process starts with the ideas and ideas of the community by structuring the river, then preparing the next planning stage for the implementation stage. At the stage of developing the idea which was a spontaneous idea from residents who had a longing for the ancient river and the sensitivity of the tour guide profession in seeing the need to improve environmental conditions in Peliatan Village. The physical condition of the river after being handled becomes cleaner, more well-maintained and has aesthetic value. People start bathing, washing or just relaxing by swimming in the river. A sense of belonging from the community emerges where the community plays a role in keeping the river clean. The reappearance of a tradition that has not been carried out for a long time, namely the debting mala tradition, which is a tradition of cleansing before holding a wedding ceremony which requires river media in the ceremonial procession. The residents' longing for the ancient function of the river began to be fulfilled from the arrangement of the river by including sculptural and sculptural activities in it. Children began to flock to the river just to play in the water and fish. In order to keep the activities going, the community legalized the pararem contained in the village awig-awig for offenders who litter. Periodic cleaning is also needed because activities involve nature and cannot be fully controlled but can be prevented by carrying out regular maintenance and cleaning. From the results of the analysis of the research data, it was retrieved that mutual cooperation or other cleaning activities would not create a strong impetus for the people of Peliatan Village to carry out this activity, however, when combined with elements of art and culture, this encouragement would emerge from within and become a very powerful impetus. strong enough to protect the environment. The obstacles encountered were obstacles in funding with field execution solutions adjusting funds or submitting funding proposals according to the activities being carried out. The second obstacle is disagreement with the solution of reaching consensus by applying the principles of customary law and drawing a common thread for the main goals to be achieved for the purpose of better village development. The next obstacle is that there are activities that do not fully go according to plan but still adhere to the common good goals. Recommendations for application in other places by paying attention to 3 points, namely; 1) realizing the image of a village or city; 2) recognize the potential of existing human resources and natural resources; 3) see opportunities from the local government. These three points were obtained from the experience of the perpetrators of the activities and analysis of the results of observations and interviews.

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