

Efforts to Empower the Community in the Effort to Keep the River Clean Through Collective Activities and Spreading Catfish and Tilac Seeds in Gunung Handeuleum Village

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ABSTRACT

Community behavior in protecting and preserving the environment is minimal, including in keeping the river clean, the main thing that causes river pollution is garbage. Garbage problems are common in various regions in Indonesia, including in the Bogor Regency area, where waste is still a serious problem. Therefore, the aim is to empower the community through a river cleaning program and spread catfish and tilapia seeds which will later reproduce so that they can be used for the community, then carry out mutual cooperation activities in an effort to keep the river clean to improve polluted river ecosystems and it is hoped that local residents will become care more about the river environment. The method used in this study is a direct survey, to see the condition of the river and the level of pollution by garbage and the number of fish in the river. The results of community empowerment in maintaining the cleanliness of the river are carrying out mutual cooperation activities to clean up trash from the river, spread catfish and tilapia seeds and provide water hyacinth plants. Thus it can be concluded that community empowerment activities in keeping the river clean are effective in reducing river pollution so that the river becomes clean and beneficial for the local community.

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INTRODUCTION

Various human activities either directly or indirectly produce waste. The more sophisticated technology in the world, the more waste will be generated. Based on data for 2020 Indonesia produces 32,976,673.38 (tons/year) waste generation, 13.23% waste reduction 4,363,510.67 (tons/year), 45.97% waste handling 15,157,968.16 (tons/year), 59.2% managed waste 19,521,478.83 (tons/year), non-managed waste managed 40.8% 13,455,194.55 (tons/year). (Ministry of Environment and Forestry Directorate General of Waste, Waste and B3 Management Directorate of Waste Management, 2020)

According to Law Number 18 of 2008 concerning Waste Management, what is meant by waste is the residue of human daily activities and/or natural processes in solid form. There are still many people who do not understand the dangers of throwing garbage, especially into the river, one of which can cause flooding if the flow is blocked and silting of the river by garbage occurs, which of course will pollute the river.

In PP No. 20/1990 concerning Water Pollution Control, namely the inclusion of living things, substances, energy, and or other components into the water by human activities so that the quality of the water drops to a certain limit which causes the water to no longer be used according to its designation. One of them is the waste that causes river pollution, especially plastic waste and household waste.

All of this waste is disposed of at the final processing site (TPA), one of which is the Galuga landfill which is a controlled landfill area for the domestic waste of the residents of Bogor City and Regency. 92% of the 54 ha area is allocated for Bogor City domestic waste. As much as 500 tons/day of Bogor City domestic waste and 600 tons/day of Bogor Regency domestic waste are disposed of at the final landfill facility (Suciati & Aviantara, 2019). Environmental cleanliness including the existence of waste is very influential on everyone's health. This is of course feared that if next year there is an increase in population, the amount of waste will also increase.

The thing to worry about is that if a lot of waste is not managed and cleaned, then it becomes a source of spreading infectious diseases such as diarrhea, typhoid, cholera. It can even become a breeding ground for mosquitoes and possibly cause dengue fever and flooding during the rainy season. Therefore this needs to be addressed immediately by empowering the community through mutual cooperation to clean the river from garbage and spread catfish and tilapia seeds which are useful for improving the river ecosystem, and are beneficial for the surrounding community.

RESEARCH METHODS

The research method carried out from activities is a direct survey to the research location. The survey method is an investigation conducted to obtain facts from existing phenomena and seek information factually, either about social, economic or political institutions of a group or events in an area (Nazir, M. 2003). The survey method dissects and recognizes problems as well as obtains justification for the conditions and ongoing practices. The survey results for the location of the river are precisely in RT01/RW07, village of Situ Udik kp. Gunung Handeuleum, Cibungbulang sub-district, Bogor Regency.

By observing along the river flow and the amount of garbage stuck so that the river is dirty and clogged. The following are the stages of the process flow of community service activities in Situ Udik Village, Gunung Handeuleum Village in an effort to keep the river clean.

1. Survey the river site prior to cleaning

The condition of the river in Kampung Gunung Handeuleum before it was cleaned, there was still a lot of garbage that was stuck and lifted from the riverbed so that it became dirty, the flow was blocked and the river became shallow

2. Licensing and informing activities to local residents

The location of the river is in RT 01/RW 07, therefore the researchers carried out the permitting process to carry out the river cleaning program to the head of RT 01 accompanied by the signing of a partner letter.

3. Equipment preparation

a. Net

The 5 meters are used to filter waste carried by the river and can then be picked up by local residents and thrown into the trash.

b. Bag

The sacks are used in the process of community service cleaning the river to transport the waste that is lifted from the river and put it in sacks and then dispose of it in TPS.

c. Fish seeds

If the trash has been removed, the net has been attached really firmly, then the seeds are ready to be scattered in the river. This is very beneficial for the ecosystem around the river and for the community if it can develop properly. The choice of catfish and tilapia is considered appropriate by the community because these fish are indeed native to the river.

The type of catfish stocked in the river is the sangkuriang catfish (*Clarias gariepinus*) which is one of the leading catfish. This catfish has growth that is twice as fast as other African catfish seeds at the same age level (Tasyah et al., 2020). Sangkuriang catfish is one of the freshwater fish that is very popular with the people of Indonesia, and has a high protein content. The choice of the type of sangkuriang catfish is indeed appropriate to be released into the river.

Tilapia (*Oreochromis niloticus*) is a type of freshwater fish with a long, flat body shape and blackish-white color. Tilapia has spread in various countries on five continents with tropical and subtropical climates,

whereas in areas with cold climates, tilapia cannot live well (Kembuan et al., 2019). The choice of tilapia to be released into the wild is because it is easy to maintain and has fast growth and reproduction, but like other types of fish, it takes a long time to achieve maximum growth.

d. Water hyacinth

Water hyacinth plants can be used to reduce pollution of heavy metal levels in water polluted by the elements Pb, Cd, Cu, Fe, Zn, and Hg (Serdar, 2019). With proper treatment, water hyacinth can produce biogas as fuel for gas engines for power plants and can also be used as fertilizer for plant fertilizer (Mashavira et al., 2015). Water hyacinth is able to grow and reproduce very quickly, so its productivity is very high. So that giving water hyacinth in the river is expected to reduce water pollution and become a nest and natural food for fish.

RESULTS AND DISCUSSION

The results of the process of implementing the river cleaning program and stocking fish seeds were carried out in mutual cooperation with the surrounding community, to be precise, the residents of RT01 RW07. The following are some of the processes for implementing joint activities including:

1. River cleaning process

The people of RT01/RW07 in Gunung Handeuleum village are very enthusiastic in carrying out community service activities for cleaning the river. This is very beneficial for those who are a real solution and action in reducing river pollution and flooding. This is in line with the results of research (Anis khairun nisa, 2019) stating that the implementation of the clean river program has been carried out. However, obstacles are still found, namely the implementation of the clean river program is not optimal, as is the case with a limited budget and lack of public awareness of the importance of river cleanliness. Budget limitations are indeed an obstacle to the program but it is hoped that after the river in Gunung Handeuleum village is clean, the community will be more concerned about keeping the river clean.

After the waste is removed from the river, it is then put in sacks so that the waste is neat and not scattered. Then later it will be disposed of in a TPS and then transported by the Bogor Regency Environment Service Garbage truck.

According to research conducted (Dwi Indrawati, 2018) regarding efforts to control river pollution caused by garbage. Disposal of waste into rivers is generally carried out by residents who live and/or do activities on the banks of the river. This condition is in accordance with the condition of the river in the village of Mount Handeuleum, there are indeed many residents' houses around the river banks, but after the garbage in the river is cleaned and removed. Then the level of awareness of the dangers of throwing garbage into the river will increase and the river ecosystem will be well maintained.

2. State of the river after cleaning

The condition of the river after cleaning can be seen that there is no trash and weeds attached to the walls so that the water flow becomes stable. Based on the results of research (Reynhard Mahda et al, 2019) regarding community behavior in disposing of garbage into the river, it was found that the community was still not good because most people did not know that it was important to keep the riverbank areas clean. Some people also do not know the impact of not keeping the riverbanks clean. Therefore, after the river is clean from garbage and the fish seeds are spread, it is hoped that the community will care more about and maintain the cleanliness of the river in the village of Mount Handeuleum.

The condition of the river after being cleaned is then the process of installing nets and water hyacinth to filter garbage.

3. Spreading fish seeds in the river

The final stage in cleaning the river is spreading fish seeds in the Kampung Handeuleum river with two types of fish namely catfish and tilapia, this is expected to reduce river pollution and improve its ecosystem.

The result of community service in the village of Situ Udik on the Kampung Handeuleum River is the creation of a river that is clean from garbage, smooth water flow, and the presence of water hyacinth plants to absorb water pollution. As well as lots of fish seeds that are stocked so that the level of pollution in the Gunung Handeuleum village river is reduced. This also makes people more concerned with the importance of keeping the river clean.

CONCLUSION

Based on the results of the river cleaning KKN program in the village of Mount Handeuleum which had been planned, compiled and implemented. So there are several conclusions, namely:

1. The implementation of the river cleaning program cannot be separated from the cooperation and high enthusiasm of the community in cleaning and protecting the river.
2. Increasing the level of public awareness of the negative impact if the river is polluted by garbage.
3. Implementing a river cleaning program by cleaning up trash, providing water hyacinth and spreading catfish and tilapia seeds. very useful for reducing river pollution and beneficial for the surrounding community. By doing this, it is certain that the community cares more about keeping the river clean.

Thank-you note

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