



Optimizing The Karang Mumus River School (SeSuKaMu) as An Innovation to Revitalize the River

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ABSTRAK

Kondisi Sungai Karang Mumus telah menurun baik dari segi kualitas air maupun kondisi fisik sungai. Situasi ini menjadi fokus utama pemerintah dalam upaya mengembalikan fungsi dan lingkungan Sungai Karang Mumus sebagai sumber pemenuhan kebutuhan air di Kalimantan Timur. Kegiatan pengabdian kepada masyarakat ini bertujuan memberikan teladan kepada masyarakat melalui kegiatan merestorasi area sekitar sungai dengan kegiatan penyemaian benih pohon yang akan ditanam di bantaran sungai bersama Komunitas Gerakan Memungut Sehelai Sampah Sungai Karang Mumus (GMSS-SKM) yang menginisiasi gerakan menyelamatkan Sungai Karang Mumus yang mengalami krisis ekologi. Metode pendekatan yang dilakukan adalah observasi dengan berdiskusi dan wawancara terkait dengan keterangan dari pegiat lingkungan GMSS SKM mengenai SeSuKaMu, kemudian dianalisis secara deskriptif. Kegiatan Pengabdian kepada masyarakat yakni kegiatan restorasi penghijauan SeSuKaMu yang dilakukan oleh Tim Pengabdian Kepada Masyarakat Program Studi Sarjana Administrasi Publik FISIP UNMUL bersama dengan komunitas GMSS-SKM. Kegiatan ini menghasilkan luaran berupa terbentuknya kepedulian lingkungan dan meningkatkan edukasi masyarakat terhadap pentingnya pelestarian Sungai Karang Mumus melalui kegiatan merevegetasi area bantaran sungai dan kegiatan penyemaian benih pohon yang akan ditanam di bantaran sungai.

ABSTRACT

The condition of the Karang Mumus River has been decreased from the water quality and physical condition of the river This situation has become the main focus of the government in an effort to restore the function and environment of the river as a source of meeting water needs in East Kalimantan. Community service activities aim to provide examples to the community through activities to restore the area around the river by sowing tree seeds that will be planted along the riverbanks with the Karang Mumus River Trash Pickup Movement Community which initiated the movement to save the river from ecological crisis. The method of approach is observation by discussing and interviewing information from environmental activists about SeSuKaMu, then analyzed descriptively. Community service activities such as the SeSuKaMu reforestation restoration carried out by the Community Service Team of the FISIP UNMUL Bachelor of Public Administration Study Program together with community resulted in outcomes in the form of the formation of environmental awareness and increasing community education on the importance of river conservation through activities to reforest the riverbank area and sowing tree seeds.

1. INTRODUCTION

Rivers are a very valuable natural resource for human survival. The benefits of rivers also vary, namely in meeting daily needs, irrigation sources, power plants, transportation facilities, and tourism (Hiryanto et al., 2021; Shafira et al., 2019). The existence of rivers that flow from upstream to downstream has the potential *Opportunity Value* and *externality effect* along the river (Prianggoro, et al., 2021). Rivers are important to be preserved through sustainable river management by protecting their quality and quantity from damage caused both from inside and outside the river (Mayasari, 2022; Sallata & Nugroho, 2022). Watersheds (DAS) are part of efforts to maintain the resilience of water resources (Veronika & Fatmawati, 2022). Ironically rivers in Indonesia are generally degraded and polluted (Hiryanto et al., 2021; Wulandari & M, 2019) which causes a decrease in the value of the river. Garbage and river waste are almost

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always found in various regions, especially urban areas (Ahmad, 2019). The increase in population accompanied by increased development activities has a negative impact on the current watershed. Watershed damage is inseparable from the increasingly massive human intervention that does damage to the environment, causing pollution and land erosion which has a negative impact on river conditions (Mulyawan et al., 2022; Prayogo & Arfarita, 2023). The lack of level of concern and the role of the community in protecting the surrounding environment certainly increases the level of disaster risk in the future (Irma Suryanti & Wijayanti, 2023).

Samarinda City as the capital of East Kalimantan Province is one of the cities that has many river saplings (Khaerani & Bulkis, 2022). Karang Mumus River is one of the rivers that flow in Samarinda City and is a tributary of the Mahakam River that flows from north to south which passes through the middle of Samarinda City with a long length 34.7 km (Ananda Malik et al., 2020; Suarnawati, 2022). Until now, The condition of the Karang Mumus River has declined both in terms of water quality and physical condition of the river (Khaerani & Priscillia, 2024). Many communities have built settlements on the banks of the river so that the river can no longer be used as a water supply Mahakam River functions in the Samarinda City area (Ananda Malik et al., 2020).

Karang Mumus River is a major concern in watershed management in East Kalimantan with the status of Top priority damage, with an area of 9,106 hectares of degraded land (Kaha et al., 2020). This situation is the main focus of the government in an effort to restore the function and environment of the Karang Mumus River as a source of meeting water needs in East Kalimantan. The increasingly poor condition of the river motivates the surrounding community to form a community of environmental activists in preserving the environment around the river (Intoniswan, 2018; Safitri, 2023). One of them is the Community Movement to Pick Up a Piece of Garbage from the Karang Mumus River (GMSS-SKM) which initiated the movement to save the Karang Mumus River which is experiencing an ecological crisis. The GMSS-SKM community was formed in 2015 chaired by Mr. Misman which at first this community was only an independent educational facility, then in 2016 this community began to actively socialize to residents around the river and in 2017 started a movement by educating about waste (Administrator, 2021; Asa, 2021). Then in 2018 until now this community is actively conducting intensive programs around the Karang Mumus River.

Responding to the problems of the Karang Mumus River raises various responses in community behavior to the perception of the slum Karang Mumus River. The community-based environmental management carried out by the GMSS-SKM community is to form a place of learning about rivers and carry out activities that can rehabilitate rivers by establishing SeSuKaMu (Karang Mumus River School) (Admin, 2022; Suharko & Kusumadewi, 2019). In SeSuKaMu, there are activities carried out in the form of discussions about the river; revegetation of the area around the river; and seeding tree seeds to be planted on the banks river (Awaloedin, Nugraha & Achyarsyah, 2023). Community-based environmental management is a form of action taken to provide an example to the wider community of the importance of protecting the environment (Basak et al., 2021; King et al., 2021). Community empowerment through this activity is able to have a positive and sustainable impact as a form of environmental conservation in the Karang Mumus River.

Based on observations, there are several obstacles in the implementation of tree planting in SeSuKaMu, including: difficult access to the SeSuKaMu location and access to the tree planting site, limited budget and facilities such as motorboats there is only one to go to the tree planting location, disputes with local residents regarding SeSuKaMu land ownership bordering community plantations not all communities and realizing the importance of maintaining the balance of nature through forest preservation. Therefore, in carrying out community-based environmental management that supports the restoration of greenery around the river, the Community Service Team of the S1 Public Administration Study Program, Faculty of Social and Political Sciences, Mulawarman University also encourages tree planting activities with the environmental activist community (GMSS-SKM) so that it can increase student awareness from the academic community in order to maintain and maintain environmental sustainability.

2. METHOD

This activity took place at Sungai Karang Mumus School (SeSuKaMu), Jalan Muang Ilir, Lempake Village, North Samarinda District, Samarinda City on July 6, 2023 with students and the academic community of the S1 Public Administration Study Program, Mulawarman University accompanied by the GMSS-SKM activist community. The implementation method used is to make observations at the Community Service location on June 21-23, 2023 by visiting the GMSS-SKM Pungut Base. Observations were made in discussions and interviews related to information from GMSS SKM environmental activists about SeSuKaMu. The results of discussions and interviews with members of the GMSS-SKM activist group, namely

Mr. Iyau. This river school carries out many actions, especially in river preservation through revegetation of the area around the river and seeding tree seeds to be planted on the riverbanks. SeSuKaMu also opens a discussion and education space about the importance of river conservation through providing knowledge and basic arguments why the Karang Mumus River must be restored immediately. The method of achieving goals in carrying out tree seed seeding activities on river banks with the aim of maintaining the sustainability of river functions, balance ecosystems in urban areas and reduce erosion. Planting trees on the banks of the river can strengthen the soil structure to be stronger, make the river look green, and improve the balance of river flow (Rabbani & Retno Budianti, 2022; Kidi, Kondo & Rakhmadian, 2023). This can help avoid flooding, control erosion, and reduce drought. Tree planting also helps absorb water, which will optimize the use of clean water and improve river water quality (Irma Suryanti & Wijayanti, 2023).

3. RESULT AND DISCUSSION

Result

Community Service is an obligation of the academic community by providing understanding and contributing to the wider community to realize community welfare through development, empowerment, and education. In order to preserve the environment, it cannot be separated from the contribution of the community to synergize with each other to provide concrete actions on environmental conservation. Community service activities are SeSuKaMu greening restoration activities carried out by the Community Service Team of the Undergraduate Study Program in Public Administration FISIP UNMUL together with the environmental activist community (GMSS-SKM) facilitated by motorboats. SeSuKaMu reforestation restoration activities are carried out by seeding tree seeds as an effort to maintain environmental preservation in order to prevent erosion on the banks of the Karang Mumus River. The activity not only focuses on planting trees but provides awareness and understanding of the importance of preserving rivers as a source of meeting community needs.

In preserving the environment not only with awareness alone but a strong commitment is needed to carry it out both in terms of energy, effort, and sustainable time. One form of commitment created is the existence of a person or group of people who work together to foster the community to participate in preserving the environment. Through restoration activities, the reforestation of SesuKaMu on the banks of the Karang Mumus River becomes a small step that has a major impact on the sustainability of the river environment. The activity was divided into two, namely providing education on the importance of reforestation on the banks of the river and seeding tree seeds on the banks of the Karang Mumus River. Greening Restoration Education Activities at SeSuKaMu Cottage showed in Figure 1.



Figure 1. Greening Restoration Education Activities at SeSuKaMu Cottage

SeSuKaMu greening restoration activities began with a briefing by the Head of the environmental activist community (GMSS-SKM), Mr. Mismar, to the Community Service Team of the Bachelor of Public Administration Study Program FISIP UNMUL regarding education on the importance of protecting the environment, especially rivers and providing directions on how to plant trees as a reference before carrying out activities. This activity was attended by 10 students of the Bachelor of Public Administration Study

Program FISIP UNMUL who were divided into 2 groups to plant trees on the banks of the Karang Mumus River.

In order to restore greening in the river, the trees planted are bungur, singkuang, rengas, kademba and others. The tree planted by the Community Service Team of the Bachelor of Public Administration Study Program FISIP UNMUL is a bungur tree. The Community Service Team of the Bachelor of Public Administration Study Program FISIP UNMUL provided 6 bungur trees recommended by the environmental activist community (GMSS-SKM). This is in accordance with the direction of Mr. Misman as Field Coordinator for the restoration of reforestation SeSuKaMu because bungur trees are suitable to be planted on the banks of the river to prevent erosion. Journey to the SesuKaMu Greening Restoration Site showed in [Figure 2](#).



Figure 2. Journey to the SesuKaMu Greening Restoration Site

The location of the SeSuKaMu greening restoration is on the banks of the Karang Mumus River, precisely block 6 using 2 units of motorboats facilitated by the environmental activist community (GMSS-SKM). The distance to the location is 350 meters from the SeSuKaMu gazebo located in block 5 and must be reached against the current from the flow of the Karang Mumus River. Each motorboat can accommodate as many as 5 people and is captained by members of the environmental activist community (GMSS-SKM). Greening Restoration Activities in Block 6, Karang Mumus River showed in [Figure 3](#).



Figure 3. Greening Restoration Activities in Block 6, Karang Mumus River

In this activity, the Community Service Team of the Public Administration Undergraduate Study Program FISIP UNMUL planted trees in block 6, on the banks of the Karang Mumus River. The facilities used in planting trees are hoes and machetes so that it helps and facilitates planting trees at every point of the block 6 area. There are various kinds of trees planted in this area, namely bayur, bungur, kademba, putat, singkuang, rengas, and cassava. There are 6 locations for planting bungur tree seeds with a distance of 2 meters between trees parallel so that each tree has enough space to develop properly.

The banks of the Karang Mumus River have ultisol/podzolic soil characteristics so that they are prone to erosion around the river. Therefore, the Community Service Team of the Bachelor of Public Administration Study Program FISIP UNMUL together with the environmental activist community (GMSS-SKM) planted using bungur trees that are suitable for all types of soil and have sturdy and strong root characteristics in absorbing water optimally. From the results of the restoration of SeSuKaMu greening carried out by the Community Service Team, the Undergraduate Study Program in Public Administration FISIP UNMUL succeeded in planting bungur trees well in order to realize watershed protection (DAS) in the Karang Mumus River. In addition, students who participated in the activity gained deeper knowledge about greening restoration through SeSuKaMu initiated by the environmental activist community (GMSS

Discussion

Community Service Activities carried out by the Community Service Team of the S1 Public Administration Study Program, Faculty of Social and Political Sciences, Mulawarman University through SeSuKaMu greening restoration activities are a form of increasing student awareness from the academic community in order to maintain and maintain environmental sustainability. The presence of SesuKaMu is important in responding to the problems of the Karang Mumus River ([Kaha, Avan & Verensius Era, 2020](#);

Harinawati & Candrasari, 2023). SeSuKaMu is a place to learn about rivers and carry out activities that can rehabilitate rivers through debriefing and education presented (Suarnawati & Dahliani, 2022). In addition, by revegetating the area around the river and seeding tree seeds to be planted on the banks of the Karang Mumus River, it can certainly strengthen soil structure, improve river flow balance, and control erosion (Dunggio & Chairil Ichsan, 2022; Rizki, 2023). In the implementation of SeSuKaMu, there are still obstacles in the implementation of tree planting, namely the difficulty of access to the SeSuKaMu location and access to the tree planting site, limited budget and facilities such as motorboats there is only one to go to the tree planting location, there are disputes with local residents regarding the ownership of SeSuKaMu land bordering the plantations of not all communities and realize the importance of maintaining the balance of nature through forest conservation.

The Karang Mumus River is important to be maintained and preserved. Sekolah Sungai Karang Mumus (SeSuKaMu), which started from the Movement to Pick Up a Piece of Garbage from the Karang Mumus River (GMSS-SKM). SeSuKaMu becomes a river school that offers *Learning and Experience Centre* Understanding the River (Alkhairiyah et al., 2023; Suarnawati, 2022). The idea of environmental education offered by SeSuKaMu has been oriented towards the future, namely presenting activities and programs that raise awareness in the community (Marlina & Suharini, 2019; Suharko & Kusumadewi, 2019). Tree seed seeding is not only aimed at greening but more than that, it is oriented towards a big goal so that the SKM ecosystem slowly begins to live and develop properly. Simultaneous (Hiryanto et al., 2021; Safitri, 2023; Zunariyah & Suharko, 2022). Tree planting in the context of river restoration also does not pursue how many trees are planted but how much life expectancy of trees planted, namely bungur trees.

Research results by (Khaerani & Priscillia, 2023) explained that one of the efforts to change awareness, understanding, and attitudes is through the environmental movement. Previous research states that environmental cleanliness cannot be separated from human life and is a fundamental element in health and prevention science where cleanliness is a reflection of humans in carrying out daily life (Wardani, 2020). Research by (Magdalena & Saepudin, 2023) also confirms that the environment is an inseparable part of humans so that community service activities by academics become a real form that provides solutions to problems that occur in society by prioritizing environmentally sound education. Environmental problems are not for the sake of the environment itself, but paying attention to their interrelation with social, economic, cultural and political aspects is a characteristic of environmental education oriented towards sustainable development (Fahlevi et al., 2020; Marlina & Suharini, 2019). SeSuKaMu is a place oriented towards river education by directing river maintenance activities to be useful for users for the needs of life. Therefore, through Community Service Activities carried out by the Community Service Team, the Public Administration Study Program, Faculty of Social and Political Sciences, Mulawarman University through SeSuKaMu not only provides education to preserve the environment around the river, but also through concrete actions to sow tree seeds that will be planted on the banks of the Karang Mumus River. A place oriented towards river education by directing river maintenance activities to be useful for users for the needs of life.

4. CONCLUSION

Community Service Activities carried out by the Bachelor Public Administration Study Program, Faculty of Social and Political Sciences, Mulawarman University are expected to increase awareness and set an example to the community on the importance of sustainability of the Karang Mumus River, especially in an effort to restore the function and environment of the river as a source of meeting community water needs. Environmental education through river restoration activities oriented towards sustainable development as an important form of action in protecting the environment. River restoration in SeSuKaMu with tree seed playing activities on the banks of the river will maintain the preservation of river function, ecosystem balance and reduce erosion. Through this activity, it is able to provide a positive and sustainable impact as a form of environmental conservation in the Karang Mumus River together with the GMSS-SKM community.

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as educating and providing knowledge that had a major impact, especially in increasing awareness and understanding of the importance of preserving the Karang Mumus River.

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