

Good Environmental Governance in River Revitalization in Kedungcangkring, Sidoarjo, Indonesia

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Abstract. Flooding is a natural disaster that frequently occurs in Indonesia, especially during the rainy season, due to high rainfall, narrowing of waterways, and low public awareness in maintaining river cleanliness. Sidoarjo Regency is one of the flood-prone areas, mainly caused by sedimentation and the blockage of river flow by domestic waste and industrial waste. To address this issue, the Sidoarjo Regency Government initiated the "Sido Resik" Program, a river revitalization policy based on environmental governance. This study was conducted in Kedungcangkring Village, Jabon District, Sidoarjo Regency, selected for its success in winning first place in the 2023 Sido Resik Program. The purpose of this research is to describe the role of multiple actors namely the Village Government, the Public Works and Water Resources Department, and the local community in river revitalization through the Sido Resik Program, guided by the principles of Good Environmental Governance. This study uses a descriptive qualitative method with data collected through field observations, interviews, and documentation. The results are based on the Good Environmental Governance indicators by Faisah and Prianto, which include participation, rule of law, and transparency. Findings show that river revitalization in Kedungcangkring has been effective due to active participation and transparency. However, challenges remain in the legal framework, particularly in enforcement and clarity of regulations. Therefore, there is a need for legal reinforcement to ensure better coordination and program sustainability. In conclusion, consistent application of Good Environmental Governance principles leads to effective and sustainable environmental management.

Keywords: Environmental Governance; Flood; Revitalization; River.

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INTRODUCTION

Rivers have an important role as a source of water for all living things, so their preservation is very necessary (Muhjad, 2015). Based on Government Regulation No. 38 of 2011, a river is a waterway or container, natural or artificial, that flows from upstream to the estuary and is bounded by borders. As one of the most important ecosystems, rivers not only function as habitats for various types of flora and fauna, but are also widely utilized by the community for various daily needs. River water is the main source for domestic activities such as cooking, washing, bathing and drinking, especially in areas that do not have access to clean water from other sources. In addition, rivers also play an important role in the agricultural sector, where the water is used for irrigation of agricultural land to support food production.

In some areas, the river serves as a transportation route and a source of livelihood through fisheries activities, which provide livelihoods for many families. This diverse utilization of rivers

shows how vital the role of rivers is in supporting people's lives directly and indirectly. Therefore, the management and conservation of rivers are very important so that their ecological and social functions are maintained for the sustainability of human life and the surrounding environment (Suarnawati & Dahliani, 2022). However, inappropriate utilization can damage ecosystems and trigger disasters such as floods (Diniarti, 2021). Flooding occurs when the river's capacity cannot accommodate excess water flow (Setiawan et al., 2022). The causes can come from natural factors such as high rainfall, sedimentation, and infrastructure damage as well as human factors, such as land use change and littering (Razikin et al., 2017). The geographical condition of the lowlands near the coast also increases vulnerability, especially during residential sea tides (Ronga et al., 2024). This factor makes lowland areas highly vulnerable to flooding, especially if there are no adequate mitigation efforts (Alamsyah et al., 2022).

Based on the National Disaster Risk Assessment 2022-2026, Sidoarjo Regency is among 12 districts in East Java with a high risk of flooding. The area is dominated by lowlands with a slope of 0-2%, increasing the potential for flooding (Sidoarjo Flood Contingency Document, 2019). Addressing this problem requires the revitalization of rivers and drainage systems based on the principles of good environmental governance in accordance with Law No. 32/2009, which includes participation, transparency, accountability, efficiency, and fairness. These efforts must involve the active role of not only the government, but also the community. Revitalization, according to the Indonesian Dictionary, is the act of reviving something that has lost its function. In the context of rivers, revitalization refers to a systematic effort to restore and restore the ecological, social, and economic functions of rivers that have been damaged or degraded due to various factors, such as pollution, sedimentation, flow changes, and unsustainable human activities. This revitalization process involves various actions, ranging from cleaning the river from garbage and waste, controlling erosion in the watershed, to improving the physical structure of the river so that water flow can run optimally (Kariem & Afrijal, 2021).

The main objective of revitalization is to improve the quality of river ecosystems and the quality of water in them, so that they can support the sustainability of various ecological and social functions. In addition, revitalization also aims to reduce the risk of floods that often occur due to a decrease in the river's capacity to hold and drain water. Through various efforts such as river normalization, sedimentation control, and improvement of water flow structures, the risk of overflowing water into settlements and agricultural land can be minimized (Suharko & Kusumadewi, 2019).

Environmental governance refers to the interaction of various actors in formulating and implementing environmental policies, both formal and informal, to support sustainable development (Ulum & Ngindana, 2017). Good environmental governance emphasizes the importance of participation, collaboration, and active involvement of all parties involved in environmental management. This principle recognizes that the success of natural resource management and environmental conservation cannot be achieved effectively if it only relies on one party, such as the government or certain institutions. Therefore, good environmental governance encourages the involvement of various stakeholders, ranging from central and local governments, communities. This participation includes involvement in the planning process, decision making, implementation, and monitoring of environmental policies (UNEP, 2009 in (Ulum & Ngindana, 2017).

River revitalization in Sidoarjo District is carried out by promoting the principles of good environmental governance, which places the improvement of river functions as a shared responsibility between the government and the community. This collaborative approach is essential for revitalization efforts to be effective and sustainable, especially in reducing flood risk while preserving the environment. As a concrete manifestation, the Sidoarjo District Government is implementing the Sido Resik Program (Sidoarjo Revitalizing River Functions), which has become part of the 2021-2026 Regional Medium-Term Development Plan. This program is in line with the principle of benefit in Law No. 32/2009 on Environmental Protection and Management, which affirms that development must be adjusted to the potential of natural resources in order to achieve community welfare in a sustainable manner. In addition, the program also encourages the use of rivers as green open spaces, local tourist destinations, and the development of micro, small, and medium enterprises (MSMEs) around river areas. Thus, river revitalization does not only focus on physical aspects, but also increases social and economic value for local communities.

The implementation of Sido Resik also emphasizes transparency and accountability in program management, as well as cross-sector collaboration between local governments, local communities, and various other stakeholders. This aims to create effective and sustainable environmental governance, so that previously neglected rivers can become important assets for regional development and community welfare. The success of this program can be seen from the various villages that have successfully transformed rivers into attractive tourist destinations and public spaces, while increasing public awareness of the importance of maintaining river cleanliness and function for future generations.

The Sido Resik program is one of the main priorities of the Sidoarjo District Government in an effort to expand green open space, manage waste, and overcome river pollution and flooding problems that often hit the region. Activities in this program include routine river cleaning, normalization of water flow to optimize river function, reforestation of riverbanks to improve the ecosystem, and environmental education to raise public awareness of the importance of keeping rivers clean and sustainable. The uniqueness of the Sido Resik Program lies in the active involvement of the community through inter-village competitions, which not only spur the spirit of participation but also encourage the creativity of residents in keeping the river and surrounding environment clean. Through this competition, it is hoped that the collective awareness of the community will grow so that they feel they own the river and are responsible for taking care of it. The main objective of this program is to reduce the risk of flooding, beautify the environment, and provide added economic value through sustainable use of the river, which is achieved through synergy between the government and the community.

The Sido Resik program has been implemented in two rounds, in 2021 and 2023. In the first implementation in 2021, Candinegoro Village won first place, followed by Ketapang Village and Porong Village as second and third place winners. In 2022, the program was replaced by socialization activities to strengthen community understanding. Then, in the second round in 2023, Kedungcangkring Village won first place, followed by Gempolsari Village and Kemantren Village. These three villages also received support in the form of physical channel improvement activities in 2024 as a follow-up to their success.

This program is inseparable from the strong synergy between the Sidoarjo District Public Works Bina Marga and Water Resources Office, the local village government, and the active participation of the community. This collaboration is the main key in supporting the river revitalization process so that the program can run well and have a sustainable positive impact on the environment and the welfare of the local community. Thus, Sido Resik is not just a river cleaning program, but also a joint movement that promotes environmental awareness and community empowerment in protecting natural resources that are vital for their lives.

The role of various parties, such as the Sidoarjo District Public Works Office of Bina Marga and Water Resources, the Village Government, and the Kedungcangkring Village community, determines the success of river revitalization through the Sido Resik Program. This research refers to a study (Hermiati et al., 2018) that examined the implementation of Good Environmental Governance in the Bengkulu River Watershed, which found low stakeholder involvement and a lack of synergy between actors. However, this study differs from the previous study due to its

focus and location; while the previous study highlighted constraints in the Bengkulu River Watershed, this study examines the role of multi-actors in the implementation of the Sido Resik Program in Kedungcangkring Village, using indicators of participation, rule of law, and transparency as proposed by (Faisah & Prianto, 2015).

Based on that background, the role of the Sidoarjo District Public Works Bina Marga and Water Resources Office, the Village Government, and the Kedungcangkring Village community is vital in the success of the Sido Resik Program, as evidenced by the village's success in winning first place and an award in the Innovation Government Award (IGA) 2024. Therefore, this study aims to analyze the role of multi-actors in supporting river revitalization based on the principles of Good Environmental Governance through the Sido Resik Program in Kedungcangkring Village. These principles emphasize the importance of participation, compliance with the rule of law, and transparency as the foundation of effective and sustainable environmental governance.

METHOD

This research used a qualitative method with a case study approach to gain an in-depth understanding of the Sido Resik Program in Kedungcangkring Village, Sidoarjo Regency. The qualitative method was chosen because of its focus on exploring the meaning and understanding of phenomena in a natural context without manipulation by researchers (Sugiyono, 2022). Case studies allow researchers to explore in detail the dynamics of interaction and the role of multi-actors in program implementation, resulting in a comprehensive and in-depth description (Abdussamad, 2021). The data collected consists of primary data, which is information obtained directly from the original source through direct interaction such as interviews, observation, and documentation, as well as secondary data derived from sources such as books, journals, documents, and news related to the research topic. The selection of key informants in this study used purposive and snowball techniques, which emphasize the selection of individuals with in-depth understanding and mastery of relevant data according to research objectives (Abdussamad, 2021). The informants interviewed consisted of various strategic parties, namely the staff of the Public Works Office of Bina Marga and Water Resources, the Head of Kedungcangkring Village, the Secretary of Kedungcangkring Village, the Head of the Neighborhood Association and the Community. Data analysis is a systematic process for managing and organizing data from interviews, field notes, and documentation to make it easy to understand, including grouping, breaking down, combining, patterning, selecting important data, and drawing conclusions (Abdussamad, 2021). According to Miles, Huberman, and Saldana (2014), qualitative data consists of four main stages: (1) data collection from various sources

such as interviews, observations, and documents; (2) data condensation by filtering and organizing data to focus on the main themes; (3) data presentation in an organized form such as tables or narratives to facilitate understanding of patterns; and (4) conclusion drawing based on the patterns found, which is validated through triangulation to ensure the accuracy and consistency of the findings.

RESULT AND DISCUSSION

Participation

According to Faisah and Prianto (2015), participation is a process in which individuals, social groups, and organizations play a role in influencing the planning, implementation, and monitoring of policies that directly impact their lives. Meanwhile, Pebrianti (2021) states that community involvement in decision-making can be done directly or through representative institutions as a means of conveying aspirations. This participation is active, reflecting the real contribution and commitment of the community in determining the direction of policies. Participation is also reflected in the involvement of various actors who play important roles in each stage of program or activity implementation.

This study highlights multi-actor participation as a form of involvement between the Public Works and Water Resources Agency, the Kedungcangkring Village Government, and the village community in managing common interests and working together for the success of the Sido Resik Program in Kedungcangkring Village. This involvement can take various forms, such as labor contributions, innovative ideas and concepts, and the material support needed. Furthermore, participation also includes collective responsibility for agreed decisions, so that all parties involved actively contribute to achieving shared goals aligned with the principles of good environmental governance, as explained by Faisah and Prianto (2015).

The research results show that the Sidoarjo District Public Works, Highways, and Water Resources Agency plays a strategic role in supporting the success of the Sido Resik Program, especially since the joint planning stage with the district government. This agency helped develop the basic concept, technical guidelines, and operational guidelines for the program used by participating villages, including Kedungcangkring Village. In addition to providing technical guidance, the department also provides direct assistance from planning, implementation, to evaluation of activities, which underscores its active commitment to achieving the program's objectives. This aligns with the perspective of Purnama & Chelonia (2020), who state that government participation is crucial for ensuring the effective implementation of a program.

The agency also assesses and directs village development proposals to align with the main objectives of river revitalization, such as restoring ecological functions and preserving the environment. This collaboration underscores the agency's role as an active partner, not merely a facilitator, in realizing the principles of good environmental governance. This cross-sectoral involvement strengthens the relationship between the local government and the village, as stated by Ulum & Ngindana (2017) in order to respond to environmental issues and promote sustainable development.

The participation of the village community itself is very visible in various forms of contribution. Residents actively provide constructive ideas and suggestions, assist in the preparation of proposals, and carry out community service and gotong-royong as a tangible form of support for the program. This community involvement not only strengthens program implementation, but also increases the sense of ownership and shared responsibility for the success of activities in the village. Overall, the active involvement of multi-actors, namely the local government, village government, and community, in the program implementation reflects the application of the participation principle as described by (Faisah & Prianto, 2015). The principle of participation emphasizes the importance of active involvement of citizens, both individuals and groups, in the process of planning, implementing, and monitoring policies that affect their lives. The synergy and collaboration between these actors shows the contribution of energy, ideas and resources together, as well as collective responsibility in running the program. Thus, the involvement of various parties is in accordance with the principle of participation that is the foundation of good environmental governance, which ultimately ensures that the program runs effectively and has a sustainable positive impact on the welfare of the villagers.

The participation of the Kedungcangkri Village Government in the Sido Resik Program demonstrates a strong commitment from the initial selection stage. The village's success in being selected as a program participant is attributed to the readiness and proactive initiative of the village government, particularly in the collaborative development of the proposal with the community. This process reflects alignment between development plans and local needs. As a tangible contribution, the Village Government allocated funds amounting to Rp300 million from the Village Budget for the construction of facilities such as parks, gazebos, and jogging tracks. These facilities not only enhance the environment but also serve as symbols of the village's revitalization success. This aligns with Parwoto's perspective in (Sawir, 2021) that roles can be realized through ideas, labor, funds, or other resources as needed.

In addition to budgetary support, the participation of the village government is also evident in its cooperation with various parties. The Kedungcangkring Village Government actively collaborates with the Public Works, Highways, and Water Resources Agency, neighborhood associations, and other community groups. This form of involvement aligns with the concept of participation as outlined by Narayan Balbase in (Rusadi & Nina Yusraini, 2021) which emphasizes the importance of grassroots participation, from the planning stage through to implementation. The collaboration aims to ensure that each phase of the program runs optimally, in line with local needs, and strengthens the partnership between the government and residents in supporting village development. Community participation plays a crucial role in supporting the success of the Sido Resik Program in Kedungcangkring Village. The village government provides space for residents to share ideas and actively participate, from the planning stage to evaluation. Residents are not merely beneficiaries but also act as implementers who contribute concretely to activities such as community service, maintaining environmental cleanliness, and voluntarily providing labor, time, and funds.

In addition to contributions in the form of labor and materials, community participation is also evident through ideas and thoughts that are actively conveyed to the village government. Residents submit various suggestions related to program development, such as the arrangement of green spaces, the construction of gazebos, and jogging trails. The village government responds to these inputs openly by accommodating and considering them in its planning, thereby creating productive two-way communication. This is in line with the view of (Nainggolan et al., 2023) who state that the level of community involvement is an important benchmark in assessing the success of a government program. Active community participation makes this program not just a government initiative, but a joint movement that promotes the improvement of residents' welfare. More than that, community involvement also contributes greatly to maintaining environmental sustainability.

Synergy between the community, the village government, and the Public Works, Roads, and Water Resources Department plays a crucial role in enhancing the effectiveness of the Sido Resik Program. According to (Agustin et al., 2025) the success of a program is greatly influenced by collaboration among all stakeholders. Solid cooperation between the relevant agencies and the Kedungcangkring Village Government not only improves environmental quality, particularly in river areas, but also strengthens community social participation. The involvement of all parties from the planning stage to evaluation fosters a sense of shared ownership that supports the sustainability of the program.

Rule of Law

Legal regulations are a system that encompasses various regulations and laws that must be enforced fairly, consistently, and equally for all citizens (Faisah & Prianto, 2015). The enforcement of these laws plays an important role, especially in guaranteeing the protection of human rights, so that every individual receives equal treatment and their rights and freedoms are respected without discrimination. Legal regulations are very important in applying the principle of good environmental governance in the Sido Resik Program in Kedungcangkring Village. These regulations serve as the basis for regulating the roles of the Public Works Agency, the Village Government, and the community, so that each party understands their rights and obligations in protecting the river. With clear regulations, revitalization is carried out effectively and purposefully and serves as a means of control and enforcement in the event of violations. As stated by dari (Lubis, 2022), the law regulates community behavior by limiting deviant actions. These legal regulations are not only legal in nature but also represent a shared commitment to achieving sustainable environmental governance.

The legal basis for the Sido Resik Program in Sidoarjo District, including Kedungcangkring Village, is not stipulated in a specific local regulation. However, the program is based on the 2021–2026 Sidoarjo District Medium-Term Development Plan, which includes river revitalization and environmental management as part of the regional development mission to create a clean and sustainable environment. Research findings indicate that to date, there is no specific Village Regulation governing river revitalization or management in Kedungcangkring Village. Despite this, the absence of formal regulations has not hindered the implementation of the program. The village head once proposed the creation of a Village Regulation to prevent residents from dumping waste into the river, but this has not been realized. Currently, violations are addressed through warnings from the village head as an effort to deter offenders.

Legal regulations regarding river revitalization should be established in regional regulations or village regulations to ensure that every action taken has a clear and binding legal basis. The existence of such regulations provides legal certainty in the implementation of the program and strengthens the legitimacy of the regional and village governments in implementing environmental policies. This aligns with the perspective (Ulum & Ngindana, 2017) that emphasizes the supremacy of law as the primary principle in environmental governance. However, the application of legal principles in environmental management often poses challenges, particularly in ensuring compliance and coordination among various stakeholders.

Transparency

Transparency means policies that are open to scrutiny and provide public access to information about government policies, particularly the management of public resources (Faisah & Prianto, 2015). This principle allows for oversight from various parties, including the public, thereby increasing government accountability while strengthening democracy and public participation. The government is responsible for providing complete information about natural resources and environmental conditions so that the public can easily access it, as a form of fulfilling the right to environmental information (Pratiwi & Purnomo, 2021).

The Public Works, Transportation, and Water Resources Department of Sidoarjo Regency demonstrates transparency in the Sido Resik program by providing access to information through mass media that is accessible to all segments of society. One such form is the publication of program information on online media such as the Times Indonesia website, enabling the public to stay informed about the program's progress, achievements, and the villages selected for the program, as well as the implementation process. On the Times Indonesia website, there is a dedicated submenu for the Sido Resik program, enabling readers to easily access and explore news related to the program without needing to search manually. This media serves as a two-way communication channel between the government and the public while strengthening public accountability. Thus, transparency in information sharing does not only occur within government internal processes or village meetings but also involves the broader public to support transparent and participatory environmental governance in line with the principles of good environmental governance.

The village government implements the principle of closed and open information transparency. Closed transparency is carried out by putting up banners in the village office that contain details of the Sido Resik Program budget, including funds from the APBDes, in order to maintain accountability. This step aims to provide the community with a clear understanding of the use of village funds while encouraging active participation and trust among residents in monitoring the program. This aligns with research (Ndraha et al., 2024) stating that transparency not only provides access to information but also builds trust between the government and the community. The transparency of the implementation of the Sido Resik Program in Kedungcangkring Village is evident from the socialization efforts and direct communication of information by the Village Government to the residents. Before the program began, the Village Head and staff held a socialization session with the community, particularly in Pejarakan Hamlet Rukun Tetangga 17 as the main location. During this session, residents were given an

explanation of the program's objectives, benefits, and stages. Furthermore, the Village Government openly shared the latest developments, especially directives from the Sidoarjo District Public Works, Transportation, and Water Resources Department, through community meetings and Rukun Tetangga WhatsApp groups. This approach ensures that information is disseminated evenly and in a timely manner, while also encouraging active community participation in river revitalization.

Transparency is also evident in the direct involvement of the community in monitoring and implementing the program. Residents voluntarily participate in community service activities as a form of participation and social control, ensuring that activities proceed according to plan. This approach strengthens the participatory relationship between the government and the community while demonstrating effective information disclosure. This is in line with (Nopyandri, 2016) who states that transparency aims to provide opportunities for the community to express their opinions regarding policies that will be implemented.

CONCLUSION

Based on research conducted by the Sido Resik Program in Kedungcangkring Village, the principles of Good Environmental Governance, such as participation, legal regulations, and transparency, have been implemented. Participation involves the Public Works Department, the Village Government, and the community working together to improve environmental quality and sustainability. However, the rule of law still needs to be strengthened as there are no specific village regulations for river revitalization. Transparency is effectively implemented through media, budget banners, socialization, and WhatsApp communication, which enhance accountability and community participation. Overall, participation and transparency are good, but the rule of law requires further development.

Based on the research findings, it is recommended that the Kedungcangkring Village Government immediately draft a Village Regulation specifically governing river revitalization, including prohibitions on littering and penalties for violations, to strengthen the legal basis and ensure the sustainability of the program. Additionally, the Public Works, Roads, and Water Resources Department of Sidoarjo Regency, the Village Government, and the community must maintain and enhance collaboration through a shared communication platform to ensure multi-stakeholder participation remains intact and supports the continuity of the Sido Resik Program.

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