



Public Policy Communication for Flood Management

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Abstract

Flood is a hydrometeorological disaster whose intensity and geographic scope continue to increase due to climate change, global warming, and lack of environmental management. Floods often need to be better managed through policy implementation and communication. This study reviews the communication of public policies for flood management. This review uses a traditional approach by referring to previous publications from articles and books, whereas analysis and synthesis refer to the qualitative methods. Public policy must pay attention to fairness, transparency, accountability, participation, and accommodating all parties' interests. The implementation for flood disasters needs to consider elements, the existing programs, and target groups that will receive policies. Flood disaster communication has principles such as transparency, responsiveness, efficiency, effectiveness, accountability, participation, measurement, fairness, and environmental sustainability. Effective and timely communication is very important in dealing with disasters because it can help reduce losses and increase community preparedness. The infrastructure system, which includes drainage, reservoir management, water infiltration zones (green space and densely vegetated land), and mapping of flood-prone areas, must also be communicated adequately. Flood management requires adequate public communication, thus the policy synchronization between different institutions and regions to address socioeconomics and environmental interests within a participatory-based flood management framework.

Keywords: *development, disaster management, flood, policy, risk reduction.*

Paper type: *Research paper*

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Received: 29 April 2023; Received in revised form: 27 October 2023; Accepted: 27 October 2023; Available online: 28 October 2023

Cite this document: Setiadi. (2023). Public Policy Communication for Flood Management. *The Journal of Society and Media*, 7(2), 300-312. DOI: 10.26740/jsm.v7n2.p300-312.



INTRODUCTION

Disaster management is a very important policy for the government to maintain life and human welfare. Disaster management focuses on three main aspects: prevention, emergency response, and post-disaster recovery (Dede et al., 2019). Obstacles in disaster management often occur because many related policies have not been properly integrated. In Indonesia, flooding is a hydrometeorological disaster with the widest and most severe impact; in fact, the coverage of inundation continues to increase every year (Widiawaty & Dede, 2018). Floods can be caused by low environmental awareness and bad policies. The government has important roles in dealing with floods by managing the resources to prevent and reduce the risk and helping affected communities.

Increasing institutional, organizational, implementation, technical, and political capacity is a successful key in flood management policies (Quang et al., 2021). The implementation of flood management programs needs to consider those goals, resources, and collaboration. Flood management is influenced by the coordination of all parties in achieving program goals (Christiani et al., 2021). The flood management policies, especially by local governments, often do not run optimally from the stages of disaster prevention, emergency management, rehabilitation, and reconstruction (Muhammad & Aziz, 2020). Mitigation policies require various infrastructures, from energy, water, waste management, transportation, and telecommunications (Thacker et al., 2019).

A successful program depends on the implementation impacts on society and individuals as policy targets. The first step in implementing this program is to prepare indicators. Research by Wihaji et al. (2018) discussed the implementation of drainage system policies related to the elements of their content and context, starting from planning, organizing, activating, and controlling strategies. The application of the principles of sustainable development and environmental preservation can help minimize flooding as well as the environment (Dede et al., 2023). Development needs to adhere to ecological civilization by considering environmental capacity and ecosystem function space. This policy reflects the necessary changes in economic and social development and also provides a reference for sustainable development through the carrying capacity index system (Zhang et al., 2018).

Many studies have revealed how public policies affect the flood management system, but communication barriers are vital because they can have an impact on the coordination, integration, and synergy of all parties (Dede et al., 2020). Currently, there is no review-based study available regarding the communication of flood management policies in Indonesia. In this context, review-based research can help gain a deeper understanding of communication policies and strategies, including providing evaluations and recommendations that can be implemented in the future (Gezie, 2019; Nurbayani et al., 2022). This article aims to present a review of public policy communication for flood management. Our article fills the gap in public policy and flood management for developing countries, especially in Indonesia.

METHODS

This research uses a descriptive qualitative approach in order to describe a social phenomenon. The study describes public policy as an action taken by the government to achieve the goals that have been set in the regulations, decisions, or actions (Rusli, 2013). Public policy must pay attention to the principles of fairness, transparency, accountability, and participation, as well as accommodate all parties' interests (Tachjan, 2006). Public policy is also inseparable from the political decision-making process, which aims to achieve public interests and create prosperity for society (Sintaningrum & Nurhadi, 2011). Public policy has a very broad scope, covering many problems faced by the state, such as health, education, basic infrastructure services, and disaster problems (Cochran et al., 2015).

According to Dye (2017), public policy is the embodiment of the government's actions in addressing the problems. Public policy must regulate behavior, organize bureaucracy, distribute benefits, or collect taxes – or all of these things at once (Thoha, 2008). Public policies that concern the public interests are usually set forth in the regulations, decisions, or orders. The government formulates public policies to achieve certain goals and has a broad impact on social sectors in the country (Winarno, 2011).

The impact of public policy can be simplified into four aspects, namely economic, social, political, and environmental impacts (Patarai, 2020; Patarai, 2016). Public policies can affect economic growth, such as social welfare, political stability, as well as environmental and ecosystem conditions (Wong et al., 2015).

Even though there are policies that can have a positive impact on one aspect, they can be detrimental to other aspects (Turnpenny et al., 2014). A policy must respond to various social problems, needs, and aspirations (Lowe et al., 2012). Public policy discusses broad and complex regulations, especially the government's actions in various fields to serve the community as well as prosper them (Dioikitopoulos et al., 2019). Therefore, it is necessary to analyze and pay attention to all parties' interests in the decision-making process.

RESULTS AND DISCUSSION

Public policy implementation is an important stage in the policy process that allows programs and activities to be realized. According to Dunn (2018), policies that have been set will be implemented by administrative units that mobilize financial and human resources. Policy implementation is a complex phenomenon and can be understood as a process, output, or impact. Policy implementation is a very important stage in the public process, and its success is very dependent on its implementation. Lack of research that examines policy implementation as a whole can have a negative impact on understanding the policy process and provide poor advice to policymakers (Rusli, 2013; Winarno, 2011). States that the implementation of public policy involves two actors, namely people outside the bureaucracy (legislators and courts), as well as the bureaucracy itself.

Sumaryana (2005), emphasizes that the bureaucracy is responsible for managing public policy and will follow the policy direction set by the government. The bureaucracy has an important role in the decision-making process as well as in implementing and evaluating public policies. The bureaucracy collects information and data to determine the right policies and prepare the necessary documents (Rusfiana & Supriatna, 2021). The implementation of public policies can affect security, comfort, and services that are felt directly by the public. The government, both central and regional, plays an important role in making, implementing, and evaluating public policies (Hoogerwerf, 1983). The central functions of government include determining policy directions, compiling policy documents, providing resources, implementing policies, and evaluating policies (Widodo, 2021). In addition to considerations of efficiency and economic principles, the success of

public policies must also be based on ethical and moral considerations (Saefullah, 1996; Tachjan, 2006).

There are several things that must be considered in implementing a policy, such as executors, programs to be implemented, and target groups (Smith & Larimer, 2017). In the implementation process, there are several factors that influence its success, namely the content and local environment (Rusli, 2013). Policy implementation requires a competent and consistent agency, although it needs a target group that accepts the policy. Implementing public policy consists of four stages, namely, policy formulation, policy determination, policy implementation, and policy evaluation (Patarai, 2020).

Communication in Flood Management and Development

Flood management communication refers to the process of providing information, instructions, and actions to the public and related parties to reduce the adverse effects of flooding (Maulana et al., 2021; Rahmawati, 2014). Disaster management communication plays an important role because it can help reduce losses and hazards, thereby increasing community preparedness and security (Suadnya & Paramitha, 2019). Several factors must be considered in disaster management communication, including providing accurate information, reliable sources, language and cultural compatibility, effective communication networks, and socialization (education) (Iqbal et al., 2021; Jahirin et al., 2021; Rumiati et al., 2021). Flood management communication can be done through various media, such as social media, text messages, radio, and television. It is important to consider the appropriate and effective use of media in a given situation. In addition, flood management communication must run continuously and consistently to build community awareness and preparedness in dealing with flood disasters.

Communication on flood management and regional development are interrelated with one another. Flood management communication is a government's effort to reduce the adverse effects of disasters in certain areas (Birkholz et al., 2014). In flood disaster management efforts, effective and timely communication is essential because it can reduce losses and increase community preparedness (Kellens et al., 2013; Rollason et al., 2018). In regional development planning for flood disaster management, principles such as transparency, responsiveness, efficiency, effectiveness, accountability, participation, measurement, fairness, and

environmental sustainability must be applied (Malihah, 2011; Abbas et al., 2016). The planning process involves selecting desired activities, allocating available resources, setting appropriate goals, and focusing on the future.

The local government work plan is a regional development planning document for one year approved by members of the regional legislative council (Rasyid, 2013). This work plan must comply with the regional medium-term development plan, which is valid for five years (Yandra, 2016). In achieving sustainable development, it is important to pay attention to three aspects: environmental, social, and economic. This ensures that the use of natural resources is carried out wisely with current and future needs (Apriyani, 2020; Wheeler & Beatley, 2009). In addition, community participation also plays an important role in the development process (Rahman & Malihah, 2021). In this regard, Kahfi (2015) emphasizes several benefits of community participation, such as providing information to the government, increasing public participation, increasing legal protection, and democratizing the decision-making process. Therefore, community participation in development is very significant and needs to be considered in the planning and implementation of development projects.

Communications and Infrastructure Systems

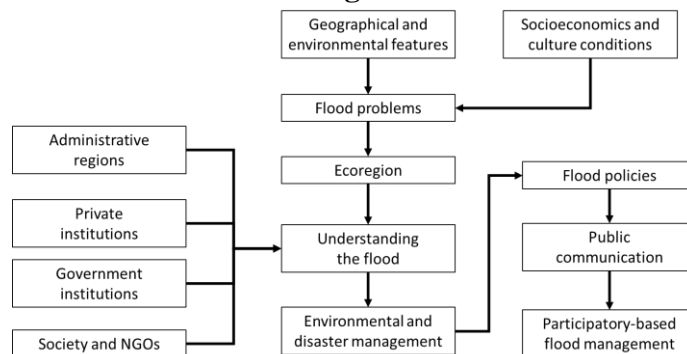
Sustainable development goals must achieve the aspect of continuity and be carried out with the principle of justice. Infrastructure development and public policies are closely related to sustainable development (Thacker et al., 2019). The government plays a strategic role in infrastructure development to minimize negative impacts and meet the needs of the present and future generations. Infrastructure systems are basic facilities and equipment that play a vital role in society (Saidi et al., 2018). Infrastructure is a physical asset that is designed as a system to provide important public services (Ouyang, 2014). In flood management, infrastructure also needs to be combined with water regulation, such as reducing greenhouse gas emissions, controlling erosion and sedimentation, and regulating land use. The combination of proper infrastructure and effective water regulation can help reduce losses due to floods and preserve the environment (Nofal & van de Lindt, 2022).

In flood management, communication and infrastructure systems play a pivotal role. First, effective communication can reduce losses caused by floods

(Bramley & Bowker, 2002). Flood management involves many parties, starting from communication between the government and the task force, conveying information to the public, as well as maintaining coordination with the security team and parties from outside the region or abroad. Second, a good infrastructure system can improve the quality of drainage, reservoir management, water catchment zones (green land and densely vegetated), and mapping of flood-prone areas (Pender & Néelz, 2007; Percival et al., 2020; Quintero et al., 2020). Finally, communication for flood management must be able to build synergy, integration, and coordination between government agencies, communities, and other parties (Wilkinson et al., 2013). Transparency and information disclosure play a central role in building mutual trust. To carry out effective public policy communications in flood management, there are several aspects that need to be considered, such as understanding the audience, using understandable language, presenting accurate and up-to-date information, using the right communication media, and involving the community or stakeholders (**Figure 1**). Finally, public communication on this disaster phenomenon can trigger the realization of participatory-based flood management.

Figure 1.

Public Policy Communication to Achieve Participatory-Based Flood Management



CONCLUSION

Public policy is an action taken by the government to achieve the developmental goals. Public policies must pay attention to the principles of fairness, transparency, accountability, and participation and accommodate all parties' interests. Public policy implementation is an important stage in the decision-making process. There are several things that must be considered in policy implementation, such as executors, programs, and the target group. The public policy

implementation process consists of formulation, determination, action, and evaluation. In regional development planning, especially for flood disaster management, principles such as measurement, fairness, and environmental sustainability must be applied. The planning process involves selecting desired activities, allocating available resources, setting appropriate goals, and focusing on the future. Effective and timely communication is very important in efforts to deal with flood disasters because it can help reduce losses and increase community preparedness.

Funding Acknowledgement

The authors thank the Office of Water Resources and Highways in Bandung City for supporting funding during this research.

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