

BPBD Gorontalo Regency's Flood Prevention and Mitigation Strategies: An Environmental Communication Study

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Article Info

Article history:

Received: 3 December 2025

Publish: 1 January 2026

Keywords:

*Environmental Communication;
Information Dissemination;
Flood Disaster;
Prevention and Mitigation.*

Abstract

BPBD Gorontalo Regency's Flood Prevention and Mitigation Strategies: An Environmental Communication Study. Effective communication is crucial in enhancing community awareness and preparedness for natural disasters, such as floods. This study examines the communication strategy of the Gorontalo Regency Regional Disaster Management Agency (BPBD) in the information dissemination about flood disaster preparedness and mitigation to the community. It employs a descriptive-qualitative method. Data collection originates from in-depth interviews, observation, and documentation. Informant selection is conducted purposively, involving key informants, primary informants, and supporting informants. The analysis employs the Environmental Communication approach by Flor & Cangara, and its procedure follows the guidelines of Miles, Huberman, and Saldana. The findings reveal that there are several strategies carried out by the Gorontalo Regency Regional Disaster Management Agency in the information dissemination about flood disaster preparedness and mitigation to the community, namely: 1) Communication Target Strategy, which describes that the primary communication targets are all people who live in the Gorontalo Regency area, specifically in flood-prone areas. As a communicator, the Prevention and Preparedness Division of the Gorontalo Regency Regional Disaster Management Agency serves as the primary source of information, considering the communication targets. 2) Communication Message Strategy, namely that each communication message has a goal that focuses on getting information to the community so that the community can carry out flood disaster prevention and mitigation measures. 3) Communication Media Strategy, namely that the Gorontalo Regency Regional Disaster Management Agency utilizes and prioritizes social media as a tool for disseminating information in addition to other media, such as direct socialization or counseling. The main social media are Facebook and WhatsApp due to efficient financing and effective access. Through the information dissemination, the agency aims to foster a culture of resilience among residents.

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1. INTRODUCTION

Floods are a constant topic of discussion, often associated with their impacts. Floods pose a significant challenge to all parties, especially the government, in implementing both prevention and mitigation measures. Gorontalo Regency is one of the regions that frequently experiences flooding. Data from the Gorontalo Regency Regional Disaster Management Agency (2023) recorded floods that hit nine sub-districts in Gorontalo

Regency: Limboto, West Limboto, Tilangohula, Tibawa, Asparaga, Bilato, Dungaliyo, Tilango, and Boliyohuto. The floods occurred due to prolonged heavy rains that caused four rivers to overflow: the Boyonga River, the Marisa River, the Biyonga River, and the Moloopu River. The floods inundated 20 villages. Several local media outlets also reported the incident, including *Antara News Gorontalo* and *Gorontalo Tribune* on March 25 – 27, 2023. Another impact was two villages, Malahu in Limboto sub-district and Tamaila in Tolangohula sub-district, which were hit by landslides following heavy rain (based on a report from the Gorontalo Regency Regional Disaster Management Agency, 2023). Therefore, the government and all levels of society in Gorontalo Regency must implement flood prevention and mitigation efforts to reduce the impacts.

As one of the most frequent disasters during the rainy season, flooding requires special attention. The impact of flooding is aimed to further reduce the spread of diseases carried by floods and also to ensure that various community activities are not disrupted by flooding that always occurs during rainy seasons. Flood disaster prevention and mitigation efforts need to be understood and responded to by the community, especially those who are located and/or live in flood-prone areas. In addition, preventive and mitigation measures are also needed to reduce the impact caused by flood disasters based on local wisdom, as stated by Suryandari, N., & Wijayani, Q. N. (2021). Community-based involvement is also in line with Robert Sakic Trogrlic *et al.* (2022). SIAP SIAGA, the Australia-Indonesia Disaster Risk Management Partnership Five-Year Program (2021), which also involved the National Disaster Management Agency, reported that disaster prevention and mitigation must become a good practice that is habituated through a community-based approach, such as Disaster Resilient Villages in Indonesia.

Talking about flood disasters, it cannot be separated from the role and function of one of the government institutions, namely the Regional Disaster Management Agency (BPBD), a non-departmental institution, which carries out disaster management tasks in both provincial and district/city areas by referring to policies established by the National Disaster Management Agency. This institution has one of the functions of implementing the identification and recognition of dangers or threats of danger. has the task of assisting the Regent in coordinating, facilitating policy formulation, and implementing disaster management, which is the authority of the regional government in dealing with disasters and environmental issues.

Environmental issues in Indonesia are multidimensional challenges that have not yet been optimally addressed. In the context of sustainable development (*sustainable development*), synergy between economic development, social development, and ecological protection must be a necessity for all parties. Harmonizing all three is necessary to ensure intergenerational sustainability. Field evidence indicates a persistently low level of ecological awareness, both among local government officials and the general public, which has led to various environmental conflicts and disasters.

Legally, Law Number 24 of 2007 concerning Disaster Management classifies disasters into three categories: natural, non-natural, and social. Among these various types of disasters, flooding is the most frequent phenomenon in Indonesia. This hydrometeorological disaster, defined as water runoff exceeding the capacity of riverbeds or drainage channels, is often triggered by heavy rainfall not matched by an adequate water management system. Even on a more extreme scale, flash floods with strong currents can cause massive material losses and loss of life in a short time.

The fundamental problem in this context is that the handling approach often only focuses on post-disaster response (*disaster response*). Although events such as flooding cannot be completely prevented, the risk can be reduced through appropriate mitigation. This is in line with Hidayat, M., & Assegaf, A. H. (2025). Addressing environmental issues cannot

be achieved solely through technical disaster management, but also requires interventions in human behavior and awareness. Therefore, there is an urgency to strengthen communication (Mutianiet *et al.*, 2024), especially Environmental Communication. Furthermore, environmental communication needs to be strengthened through participatory communication that builds a Social *Efficacy* perspective is based on the belief that communities are capable of doing things together. This is due to one-way communication (government notifications) that are no longer relevant. Communication should focus on analyzing the "mitigation barriers" felt by residents, not just fearmongering about the dangers of flooding, as emphasized by Lin, Carolyn (2025). In terms of disaster management in the form of prevention and mitigation, the use of information technology, especially social media, as stated by Ismail, Ismail & Resa, Muhammad (2024), is a strategic instrument for disseminating positive values of environmental concern.

Based on this phenomenon, this study deems it crucial to examine the environmental communication strategy of the Gorontalo Regency Regional Disaster Management Agency in disseminating information on flood prevention and mitigation. This study is useful in building collective public awareness as a preventative measure to preserve the environment and mitigate the impact of disasters.

2. RESEARCH METHODS

This research focuses on environmental communication aspects in the context of flood prevention and mitigation efforts in Gorontalo Regency. The research was conducted over two months, February–March 2024, at the Regional Disaster Management Agency (BPBD) of Gorontalo Regency. To examine this research phenomenon, a qualitative approach with descriptive analysis was employed, in line with the assertion of Sugiyono and Puji Lestari (2021).

The choice of this method reflects the perspectives of communication experts who prioritize in-depth data quality. Rachmat Kriyantono (2021) emphasizes that qualitative research aims to explain phenomena as deeply as possible. Similarly, Atwar Bajari (2014) explains that descriptive methods serve to accurately identify the characteristics of individuals or groups. Amir Hamzah (2021) also states that research activities in this area require the exploration of obscure or previously unseen phenomena. Based on this foundation, researchers attempt to comprehensively explain flood prevention and mitigation through an environmental communication perspective.

In the data collection process, researchers gathered information directly through observation and in-depth interviews with informants and documentation. Informant selection was conducted purposively, focusing on information from the Head of the Regional Disaster Management Agency (BPBD) as the key informant, the Head of the Prevention Division as the primary informant, and community members who were willing to be interviewed as supporting informants. In addition, researchers reviewed relevant documents, archives, journal articles, and books to supplement and verify the information obtained.

Researchers analyzed the results of data collection using the interactive model from Miles, Huberman, and Saldana (2018). This process consists of four stages that run in a cycle: (1)*Data Collection*, researchers began to analyze informant data through data collection triangulation to validate research data, (2)*Data Condensation*, namely researchers select, simplify, and focus raw data from the field, (3)*Data Display*, researchers present data that has been organized in the form of descriptions or diagrams to facilitate understanding, and (4) Conclusion Drawing/Verification, researchers draw conclusions that answer the problem formulation based on strong evidence.

3. RESEARCH RESULTS AND DISCUSSION (12 Pt)

The following presents a description of the research results and discussion based on the results of data collection and analysis that have been carried out.

3.1 Research result

The success of any communication activity is determined by the extent to which the communication strategy is implemented. An appropriate communication strategy will certainly result in the achievement of the communication objectives as desired by the institution. This is also the case at the Gorontalo Regency Regional Disaster Management Agency (BPBD). The agency strives to take appropriate communication steps to disseminate information on flood prevention and mitigation to the public.

After collecting research data through in-depth interviews, observations, and documentation with informants, the researcher outlined several points that were the results of the research, especially those obtained from interviews that had been selected as quotes from informants as part of the research data. The Regional Disaster Management Agency of Gorontalo Regency implemented strategic steps in disseminating information about flood disaster prevention and mitigation to the public. These steps were carried out through a planned communication strategy by considering several factors. The communication steps were prepared and planned to be able to meet the public's information needs regarding flood disasters. With the right communication strategy, it is hoped that the public can receive information related to flood disasters well, especially prevention and mitigation.

The following presents several communication steps implemented by the Regional Disaster Management Agency of Gorontalo Regency. These steps are formulated in several communication strategy plans based on Flor & Cangara (2018), namely: (1) communication target strategy, (2) communication message strategy, and (3) communication media strategy.

3.1.1 Communication Target Strategy

In developing a communication strategy for disseminating flood disaster prevention and mitigation information to the community in Gorontalo Regency, the Gorontalo Regency Regional Disaster Management Agency (BPBD) considered the communication targets implemented. The primary target of the communication conducted by the BPBD includes all residents of Gorontalo Regency. This can be observed in the following interview excerpt with the informant, namely the Head of the Prevention and Preparedness Division (initials LK).

"When asked about the target audience for our communications, our primary focus is on all levels of society, especially those in flood-prone areas. This is especially true with the extensive outreach we've disseminated within the community. We're also collaborating with sub-districts and urban villages, which are crucial for effectively disseminating information to the public." (Interview data with LK, March 2024)

The interview results above indicate that the primary target of communication by the Gorontalo Regency Regional Disaster Management Agency is the entire community from various backgrounds in general and the community in flood-prone areas in particular. Separately, an informant with the initials RJ, Secretary of the Gorontalo Regency Regional Disaster Management Agency, added that communication targets are based on age factors, but still emphasized that the primary target is the community residing in flood-prone areas. The following is the interview result.

"Our communication targets are, of course, all levels of society residing in Gorontalo Regency. Everyone, from children to adults, is receptive. This is especially true for those living in flood-prone areas." (Interview with RJ, March 2024)

Based on the results of core interviews with the two informants, it can be stated that the communication target strategy focuses on all members of the community, from children to adults, especially those living in flood-prone areas. By ensuring communication targets, the dissemination of information on flood disaster prevention and mitigation in Gorontalo Regency can be optimized by the Gorontalo Regency Regional Disaster Management Agency. The Gorontalo Regency Government delegates the task of flood disaster prevention and mitigation to the organization to act as a communicator. Therefore, in addition to digging up information in the context of communication target strategies, researchers also deepen information from the aspect of the role of communicators in communication implemented in the context of flood disaster prevention and mitigation in Gorontalo Regency.

Effective communication is determined by communicators who have credibility and the ability to persuade and influence the recipient. Therefore, in carrying out communication efforts or conveying information to the public, the Regional Disaster Management Agency of Gorontalo Regency gives responsibility to the Prevention and Preparedness Division to act as a source of information or communicator tasked with disseminating information to the public. The duties and responsibilities given to the Prevention and Preparedness Division to act as a communicator are inseparable from their main duties and functions as part of the organizational structure of the Regional Disaster Management Agency of Gorontalo Regency, which is tasked with coordinating, facilitating the formulation of policies, and implementing disaster management that is the authority of the regional government. With its main duties and functions, the division plays a role as a communicator, disseminating information related to government policies and programs to the public. The explanation as described above is based on the results of interviews with LK informants, which are presented as follows.

"Of course, it's us at the Regional Disaster Management Agency (BPBD), specifically in the Prevention and Preparedness division, as well as our community partners. Therefore, we in the Prevention and Preparedness division are tasked with disseminating this information. This is part of our role in prevention and preparedness, as part of the Gorontalo Regency BPBD organizational structure. We are tasked with coordinating the formulation of policies and implementation of disaster management, which falls under the authority of the regional government." (Interview with LK, March 2024)

From the interview results as described above, it can be seen that in order to communicate and disseminate information to the public, the Gorontalo Regency Regional Disaster Management Agency gives responsibility to one of the fields in its organizational structure, namely the Prevention and Preparedness Field, to act as a communicator.

3.1.2 Communication Message Strategy

The efforts undertaken by the Gorontalo Regency Regional Disaster Management Agency (BPBD) in relation to flood prevention and mitigation have a communication message objective in their implementation. The

communication message strategy aims to provide or disseminate information to the public regarding flood prevention and mitigation measures. The public, particularly those residing in flood-prone areas in Gorontalo Regency, can receive and understand the information related to flood disasters, including the messages and communication objectives.

Regarding the second step, namely the communication message strategy, the Gorontalo Regency Regional Disaster Management Agency confirmed the objective of disseminating information on flood prevention and mitigation. This description aligns with the results of interviews with informant LK when asked about the primary purpose of the communication messages. The following is an excerpt.

"Our communication efforts certainly have a purpose. Our primary goal is to provide information to the public about flood prevention and mitigation, especially to those living in flood-prone areas." (Interview data with LK, March 2024)

The quote above shows that every communication message carried out aims at one goal, namely connecting the information conveyed by the communicator, in this case the Gorontalo Regency Regional Disaster Management Agency (Prevention and Preparedness Section), with the community that needs related information, especially the community in areas prone to flooding.

To reinforce LK's statement, RJ's statement in response to questions about the communication message in terms of its purpose is presented below. The interview results are presented below.

"Regarding the purpose of our communication, our goal is to disseminate information about all government programs, from the central government, provincial governments, to city/regional levels, related to disaster management and disaster management. One of the pieces of information we provide is flood prevention and mitigation." (Interview data with RJ, March 2024)

Based on the interview results above, it is clear that the goal of the Gorontalo Regency Regional Disaster Management Agency in disseminating information on flood prevention and mitigation is to provide information to the public simultaneously and promptly. This statement is indicated by the dissemination of information or government messages from the central government to the regional governments. Messages in various forms, from the Central Government, Provincial Government, and Regency/City Government, are delivered by the Gorontalo Regency Regional Disaster Management Agency through outreach programs.

The interview with RJ indicated a communication messaging strategy in the form of a planned outreach program. The source of this outreach program could be initiated by the central government, the provincial government, or the district/city government. Therefore, the communication messaging strategy based on the source of the flood prevention and mitigation program in Gorontalo Regency could originate from all three levels of government, with formats that could be uniform or varied.

3.1.3 Communication Media Strategy

The next communication strategy, aimed at disseminating information on flood prevention and mitigation to the public in Gorontalo Regency, involves the Gorontalo Regency Regional Disaster Management Agency (BPBD) employing several communication media strategies. Today, communication

media have transformed into various digital platforms. Social media has become a popular choice for disseminating information. This choice is also part of the Gorontalo Regency Government's communication media strategy, specifically the Regional Disaster Management Agency.

Social media can be used as a tool to disseminate information about flood disasters to the public in Gorontalo Regency. Several social media platforms identified by informants in this study are used by the Gorontalo Regency Regional Disaster Management Agency as a means of providing information to the public. These include: *Facebook* and *WhatsApp*. The use of social media certainly requires special considerations from the party.

The following are the main points from the results of interviews with LK informants regarding questions about the communication media strategies carried out by their institutions in disseminating information on flood prevention and mitigation in Gorontalo Regency.

"So, if we talk about media, it's also one of the strategies. But right now, we only use social media, among other things. *Facebook* and *WhatsApp*. "We haven't used other media due to budget issues." (Interview Data with LK, March 2024)

The interview above revealed that the use of social media is still limited to two platforms, namely *Facebook* and *WhatsApp*. The direct response mentioning both social media means affirming that the most important media used is *Facebook* and *WhatsApp* choice is certainly more efficient in terms of funding, especially during floods. Communication barriers related to disasters must be avoided to avoid mistakes in utilizing social media effectively for budgetary purposes.

RJ also expressed similar sentiments on a different occasion regarding the Gorontalo Regency Regional Disaster Management Agency's communication media strategy. However, he also revealed other points related to its use of communication media. The following are the main points from the interview, which I've quoted below.

"The media is a crucial factor in our communication with the public. However, we only use social media platforms like *Facebook* and *WhatsApp*. We don't focus too much on social media or other platforms, as we often conduct face-to-face outreach and outreach." (Interview data with RJ, March 2024)

The interview revealed several aspects of the Gorontalo Regency Regional Disaster Management Agency's communication media strategy for disseminating information on flood prevention and mitigation. Echoing LK, informant RJ also stated that social media is utilized through, among other things, *Facebook* and *WhatsApp*. The lack of utilization of other social media or other media is due to the non-mass information dissemination format, which is carried out through socialization or outreach, which is of a command nature.

In relation to communication media strategies, the researcher also asked a community member who was willing to provide information, namely, informant DO. Additional information from community members was very relevant regarding communication media strategies when compared to communication target strategies and communication message strategies (which were more dominantly experienced by informants with the role of communicator). The statement from informant DO can be presented as follows.

"Currently, the information is quite good. Information about programs and the district government is now available not only from newspapers but also from widely used social media platforms, such as WhatsApp and Facebook. In the future, perhaps the government could activate youth organizations or other community organizations in the sub-district to disseminate this information." (Interview data with DO, March 2024)

The interview excerpt above suggests that the use of social media, alongside other media such as mass media (newspapers and similar), for information dissemination is indeed valid. Specifically, the informant mentioned two main platforms common in society: *Facebook* and *WhatsApp*. The DO informant also added that information dissemination should not only rely on the government, but the involvement of community groups, such as youth groups or other community institutions, can function effectively to support the optimization of information dissemination on flood disaster prevention and mitigation in Gorontalo Regency.

3.2 Discussion

The Gorontalo Regency Regional Disaster Management Agency is one of the government agencies responsible for disaster management. As a government agency responsible for disaster management, the Gorontalo Regency Regional Disaster Management Agency is one of the institutions the public relies on to meet their need for information related to flooding and disaster management in Gorontalo Regency.

One of the activities carried out by the Gorontalo Regency Regional Disaster Management Agency is the dissemination of information on flood prevention and mitigation to the public. The delivery of information related to flood prevention and mitigation by the Gorontalo Regency Regional Disaster Management Agency must reach the right audience. The target of information services must be able to reach all members of the public who are in conditions of access to diverse information. Therefore, steps in the form of environmental communication strategies in disseminating information related to flood prevention and mitigation need to be carried out with effective communication. The Gorontalo Regional Disaster Management Agency developed a communication strategy by considering several factors in the development of the strategy, particularly the context of environmental communication.

In the context of environmental communication, the following patterns are generated from research data through an analytical approach based on Flor and Cangara (2018) which become environmental communication strategies in this study, namely: 1) Communication Target Strategy, namely that the preparation of communication strategies carried out by the Regional Disaster Management Agency of Gorontalo Regency in disseminating information on flood disaster prevention and mitigation to the community in the Gorontalo Regency area considers the communication targets or targets. The main targets of the communication efforts carried out by the Regional Disaster Management Agency are all people domiciled in the Gorontalo Regency area, specifically people residing in flood-prone areas without looking of age. In addition, effective communication is determined by communicators who have credibility and the ability to persuade and influence the recipient. Therefore, in carrying out communication efforts and conveying information to the community, the Regional Disaster Management Agency of Gorontalo Regency gives responsibility to the Prevention and Preparedness Sector to act as a source of information or communicator who has the task of disseminating information to the community. Through its role as a communicator, the Prevention and Preparedness

Division can actively and effectively convey all information needed by the community related to flood disaster prevention and mitigation. 2) Communication Message Strategy, namely that the communication efforts carried out by the Regional Disaster Management Agency of Gorontalo Regency to the community have a purpose. The main objective of the communication carried out is to disseminate information to the community regarding steps or preparedness for the threat of flood disasters, especially those who live in flood-prone areas so that the community can receive and understand well information related to flood disaster prevention and mitigation. 3) Communication Media Strategy, namely that in carrying out communication efforts in the form of disseminating information regarding flood disaster prevention and mitigation, the Regional Disaster Management Agency of Gorontalo Regency utilizes various media as a means to convey information about flood disaster prevention and mitigation to the community in the Gorontalo Regency area. In addition to non-mass media such as direct socialization or counseling, the Regional Disaster Management Agency of Gorontalo Regency utilizes social media as a means to disseminate information on flood disaster prevention and mitigation to the community. The social media that is the main preference is Facebook and *WhatsApp* more budget-friendly and effective communication strategy for the target audience. Additionally, involving community members as communicators, such as youth groups or other groups, can help address flood prevention and mitigation issues in Gorontalo Regency.

4. CONCLUSION

Based on the results of the research and discussion, the findings in this study are that the steps in the form of environmental communication strategies carried out by the Regional Disaster Management Agency of Gorontalo Regency in disseminating information on flood disaster prevention and mitigation to the community can be traced based on several patterns, namely: 1) Communication Target Strategy, which is described that the main communication targets are all people who live in the Gorontalo Regency area, specifically people who live in flood-prone areas. In terms of the role as a communicator, the Prevention and Preparedness Division of the Regional Disaster Management Agency of Gorontalo Regency acts as the main source of information by considering the communication targets. 2) Communication Message Strategy, namely that each communication message has a goal that focuses on getting information to the community so that flood disaster prevention and mitigation measures can be carried out by the community. 3) Communication Media Strategy, namely that the Regional Disaster Management Agency of Gorontalo Regency utilizes and prioritizes social media as a tool for disseminating information in addition to other media, such as direct socialization or counseling. The main social media platforms are Facebook and *WhatsApp* because it is more efficient in terms of financing and more effective in terms of ease of access. This study recommends: (1) The Regional Disaster Management Agency of Gorontalo Regency needs to increase the use of media in conveying information on how to prevent and mitigate flood disasters (before they occur, during and after they occur), (2) The Regional Disaster Management Agency of Gorontalo Regency should form cooperation with other related agencies or institutions to facilitate the prevention and mitigation of flood disasters, and (3) The Regional Disaster Management Agency of Gorontalo Regency should form a special group to handle communities who have not received information on flood disaster prevention and mitigation, especially in vulnerable areas.

5. ACKNOWLEDGEMENT

The researcher would like to express his gratitude and highest appreciation to all parties who have helped in completing this research, especially Ichsan Gorontalo University as the researcher's affiliated campus, the Institute for Research and Community Service (LPPM), the Dean of the Faculty of Social and Political Sciences, and the Communication Science Study Program, the Gorontalo Regency Government, the Gorontalo Regency BPBD, the community who have contributed greatly to this research, and other parties who cannot be mentioned in detail.

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