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Disaster Management Strategy Through Social Capital Development

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Abstract

Indonesia is one of the countries with the highest level of natural disaster vulnerability in the world due to extreme geographical and climate conditions. In facing this risk, the government has implemented a disaster management policy based on community involvement. One important aspect in this approach is social capital, which includes social participation, interpersonal trust, and community networks, as a crucial component to strengthen community resilience. This study explores the role of the Meteorology, Climatology, and Geophysics Agency (BMKG) in Lampung Province in developing weather literacy and disaster mitigation programs through digital media to build social capital in the community. The results of the study show that although BMKG has succeeded in increasing community participation through digital channels, community involvement is currently still passive and limited. To achieve comprehensive disaster preparedness, it is necessary to increase active community participation, strengthen trust through two-way communication, and expand community networks. With a social capital-based approach, BMKG is expected to be able to create a more responsive and adaptive mitigation program, making the community an active partner in facing the threat of disasters in the future.

Keywords: Indonesia, Natural Disaster, Disaster Mitigation, Social Capital, Disaster Preparedness, Community Participation, Interpersonal Trust, Community Networks

1. Research Background

Indonesia is one of the countries most vulnerable to natural disasters in the world. Indonesia's geographical location between three active tectonic plates, as well as its extreme tropical climate, makes it very vulnerable to natural disasters such as earthquakes, volcanic eruptions, floods, and landslides. Based on data from the National Disaster Management Agency (BNPB) (2023) [25], over the past decade, the number of disasters in Indonesia has continued to increase, resulting in major losses to the social, economic, and environmental lives of local communities. In addition, global climate change has exacerbated this condition by increasing the frequency and intensity of natural disasters that occur, requiring a responsive response and comprehensive mitigation strategy.

In facing these challenges, the government has established a legal framework underlying disaster management through Law Number 24 of 2007 concerning Disaster Management. This law emphasizes the need for community involvement in disaster mitigation and adaptation efforts and strengthens coordination between government agencies, non-governmental organizations, and the community. In addition, Regulation of the Head of BNPB Number 4 of 2008 concerning Guidelines for the Establishment of a Disaster Risk Reduction Forum and Regulation of the Minister of Home Affairs Number 101 of 2018 emphasize the importance of community capacity building and direct community involvement in every stage of disaster management, from mitigation, preparation, emergency response, to recovery. However, even though these regulations already exist, their implementation still faces various obstacles, especially related to the limited capacity of local communities and the lack of resource support for sustainable community empowerment programs.

One important aspect in disaster management efforts is social capital, which includes trust, social norms, and social networks formed within a community. Social capital can be a foundation for strengthening community capacity in dealing with disasters by accelerating the distribution of information, strengthening solidarity, and facilitating cooperation between individuals in the

community. Research conducted by Aldrich (2015) [2] states that social capital has a critical role in building community resilience to disasters. In the context of flood disasters in Japan, strong social capital has been shown to accelerate post-disaster community recovery and increase the effectiveness of mitigation efforts (Aldrich & Meyer, 2015) [2]. Another study by Dynes (2006) [8] states that social capital is not only useful in the recovery phase, but also in the emergency response phase because strong social networks allow communities to share resources and information more quickly. In Indonesia, an important example of the application of social capital in disaster management can be found in the handling of flood disasters in East Java, where local communities were actively involved in monitoring and disseminating disaster information through community forums and local community institutions. A study conducted by Prasetyo *et al*. (2021) in the International Journal of Disaster Risk Reduction showed that trust and solidarity among residents helped accelerate the response to flood threats, as well as encouraging active participation in disaster preparedness programs. The success of this community shows the importance of social capital in increasing community resilience to disaster risks.

In the context of Lampung province, the efforts of the Meteorology, Climatology, and Geophysics Agency (BMKG) in increasing public awareness of extreme weather and disaster risk mitigation through digital media such as Instagram, the BMKG website, and the application are significant steps. However, community involvement is currently more passive and limited to receiving information without direct participation in preparedness activities. The results of a survey in Bandar Lampung showed that the majority of local people have a desire to play a more active role in weather literacy and disaster mitigation programs. As many as 100% of respondents stated that they agreed with the existence of a weather literacy program, and 75% stated their willingness to participate in the activity if it is held routinely in easily accessible places, such as village or sub-district offices. Their preference for holding it on weekends also reflects the importance of accessibility in participatory program planning. The approach that integrates social capital development in disaster management is also supported by the theory of community engagement in the study of Azad *et al*. (2019) [3] which shows how community-based initiatives in Bangladesh have succeeded in strengthening resilience to climate and disaster risks through direct citizen participation. A similar study by Faisal *et al.* (2024) in Indonesia found that the success of local-level interventions in disaster management is more effective when supported by consistent community engagement and building trust between the government and the community.

Therefore, by actively involving the community and building social capital through a participatory approach, the government and related institutions in Lampung can create disaster mitigation programs that are more inclusive and adaptive to the specific needs of local communities. With a higher understanding and awareness of disaster risks, the community will not only become recipients of information, but also play a role as partners in decision-making and preventive actions. This research is expected to contribute to formulating effective social capital-based disaster management strategies, in order to create a more resilient and empowered community in facing the threat of disasters in the future.

2. Literature Review

2.1 Disaster Management and Policy Framework in Indonesia

Disaster management in Indonesia is regulated through several policies, including Law Number 24 of 2007 concerning Disaster Management. This law provides a legal basis for the involvement of all parties in every phase of disaster management, from mitigation, preparedness, response, to recovery. BNPB (National Disaster Management Agency) as the main authority in handling national disasters, also encourages community capacity development through derivative regulations such as Regulation of the Head of BNPB Number 4 of 2008 and Regulation of the Minister of Home Affairs Number 101 of 2018, which focus on strengthening local capacity in disaster risk reduction (BNPB, 2023) [25].

2.2 The Concept of Social Capital in Disaster Management

Social capital is a concept that refers to social relationships, networks, and norms of trust that enable cooperation within a community. Research conducted by Aldrich & Meyer (2015) [2] shows that social capital can increase community resilience to disasters through social solidarity, mutual trust, and collective action in dealing with emergency situations. Social capital has also been shown to be effective in accelerating post-disaster recovery, as seen in a study conducted in Japan in tsunami-affected areas, where social capital strengthened social ties so that communities were better prepared to face the threat of disaster (Aldrich, 2012) [1].

2.3 Social Capital Theory

Bhandari & Yasunobu (2009) [6] reviewed the definition and measurement of social capital and identified key indicators such as social participation, interpersonal trust, and community networks. This study showed that social participation (involvement in group activities), trust (both between individuals and institutions), and intergroup connectivity (networks) are important indicators in evaluating social capital. Bäck & Kestilä (2009) [4] in Social Indicators Research focused on social trust and political trust as significant indicators of social capital. They emphasized that social trust (trust in fellow community members) and political trust (trust in government or organizations) form an important foundation for social capital in facilitating community collaboration in the context of disaster.

Lochner, Kawachi, & Kennedy (1999) [14] from Health & Place highlighted that indicators of social capital can include social support, trust, and involvement in community activities. They stated that social capital can be measured by assessing how much the community supports each other in the face of disaster and how often they engage in social activities that strengthen social networks. Engbers, Thompson, & Slaper (2017) [9] compiled five broad categories of social capital in their study, including trust, social participation, shared norms, social cohesion, and institutional support. These indicators emphasize the importance of these elements in building cooperation and

resilience in communities when facing disaster risks and challenges.

Based on several theories above, researchers use the Social Capital theory from Bhandari & Yasunobu (2009) [6] because this study highlights three main indicators of social capital that are very relevant to disaster management strategies, namely:

1. Social Participation

Active involvement of residents in disaster community activities is very important to build collective support and increase preparedness.

2. Interpersonal Trust

In disaster situations, trust between community members helps facilitate effective cooperation and collective decision-making.

3. Community Networks

A strong network between residents strengthens the community's ability to disseminate information and resources quickly when a disaster occurs.

3. Method

This study uses a descriptive qualitative approach to explore the role of social capital in strengthening community disaster preparedness in Lampung Province through the weather literacy program by BMKG. Data collection techniques applied include in-depth interviews with relevant stakeholders, including BMKG officials, local community leaders, and community members who participated in the disaster preparedness program. These interviews aim to gain an in-depth understanding of the barriers, perceptions, and effectiveness of existing weather literacy programs. Participatory observation was also conducted to directly observe community involvement in program implementation, in order to obtain an empirical perspective on the dynamics of social interactions and community participation in disaster preparedness efforts. Documentation studies were conducted through the collection and analysis of relevant reports, policies, and publications from BMKG and other government institutions, with the aim of obtaining policy contexts and frameworks related to disaster risk reduction. Based on the social capital theory of Bhandari & Yasunobu (2009) [6], this study analyzes three main indicators social participation, interpersonal trust, and community networks that play an important role in increasing community resilience. Findings from previous studies, such as Shahparvari *et al*. (2021) [19] and Azad *et al*. (2024), shows that social capital can strengthen community response and resilience in facing disasters, especially through increasing active participation and effectiveness of information distribution within the community. This research is expected to provide practical contributions for BMKG in designing more effective social capital-based strategies to strengthen community resilience through weather literacy and increasing citizen participation.

4. Results

This study uses three main indicators of social capital proposed by Bhandari & Yasunobu (2009) [6], namely social participation, interpersonal trust, and community networks, as a framework for evaluating the communication and community engagement strategies implemented by BMKG Lampung Province in supporting disaster preparedness. The results of the analysis of these indicators are explained as follows:

4.1 Social Participation

The Meteorology, Climatology, and Geophysics Agency (BMKG) of Lampung Province has made efforts to increase community social participation in disaster mitigation through the use of digital media platforms, such as Instagram, the official BMKG website, and mobile applications, which serve as primary channels for disseminating information on weather conditions and early warnings. These digital media platforms provide the public with easy and rapid access to information. However, the current form of community participation remains largely passive, limited to receiving information without active engagement in the processes of compiling or evaluating the information shared. Additionally, the BMKG Lampung Province hosts visits from various educational and governmental institutions, including schools, universities, and government agencies, enabling direct interactions that are educational in nature and strengthen institutional relationships. Nonetheless, community involvement in these activities still lacks inclusive and collaborative active participation, which would be necessary to maximize the potential for social engagement in enhancing community preparedness for disasters.

4.2 Interpersonal Trust

In efforts to build interpersonal trust between the Meteorology, Climatology, and Geophysics Agency (BMKG) and the public, the use of digital media, particularly Instagram, has facilitated two-way communication. The Meteorology, Climatology, and Geophysics Agency proactively responds to direct messages (DMs) and comments on Instagram posts, demonstrating transparency and commitment in fostering trust-based relationships.

Source: Instagram of the Meteorology, Climatology, and Geophysics Agency of Lampung Province

Fig 1: Instagram of the Meteorology, Climatology, and Geophysics Agency of Lampung Province

Source: Website of the Meteorology, Climatology, and Geophysics Agency of Lampung Province

Fig 2: Website of the Meteorology, Climatology, and Geophysics Agency of Lampung Province

Additionally, the Meteorology, Climatology, and Geophysics Agency verifies data internally before disseminating information to ensure the accuracy and reliability of information shared with the public. Although this strategy reflects the Meteorology, Climatology, and Geophysics Agency's initiative in strengthening public trust, community participation in the process of validating and evaluating information remains limited. To further reinforce interpersonal trust, active community involvement in evaluating and making decisions about information could establish stronger mutual trust and enhance the role of the public as partners in disaster preparedness efforts.

4.3 Community Network

The Meteorology, Climatology, and Geophysics Agency (BMKG) Lampung Province community network is mainly established through relationships with educational and government institutions that regularly visit the BMKG office. This interaction has the potential to expand BMKG's social network and open up opportunities for collaboration in efforts to disseminate information and disaster mitigation programs. However, this network is still limited to certain institutions that have direct access, so it does not fully reflect the involvement of the wider community. Developing a more inclusive community network, by involving local communities and the general public in the communication and education process, can strengthen BMKG's social capital in supporting disaster preparedness that is more comprehensive and responsive to community needs.

5. Discussion

5.1 Social Participation

Social capital, especially in the context of disaster mitigation, is a fundamental element in building resilient and responsive communities to natural hazards. The theory of social capital proposed by Bhandari and Yasunobu (2009) [6] specifically highlights social participation as one of the three main indicators of social capital, which illustrates the importance of active community involvement in disaster mitigation activities. Social participation in this case does not only refer to passively receiving information but also to direct community involvement in the process of formulating and evaluating disaster mitigation strategies. In the context of the Lampung Province BMKG, digital media such as Instagram and the BMKG application have been used as the main channels for disseminating information, however, the main limitation remains the low level of proactive community participation, which should be further developed so that the community not only receives information but is also active in providing input on the content and preparation of the information (Min & Sangkhiew, 2024; Webster & Neal, 2024) [15, 27]. In addition, a study by De Luque-Villa and Granda-Rodríguez (2024), which applied Bourdieu's Theory of Social Capital in the context of social resource management, found that social capital not only acts as a means of disseminating information but also as a mechanism for transmitting trust and social solidarity that are important in dealing with disasters. This opens up opportunities for BMKG to not only provide one-way information but also to facilitate community involvement through more interactive and two-way participation mechanisms. Thus, the information distributed can be adjusted based on input from communities directly affected by the disaster, creating a more responsive and adaptive feedback cycle (Jumiati & Budiati, 2024; Su *et al*., 2024) [13, 20].

Another study by Ziari and Rajaei (2024) [28] reinforces the idea that community involvement in disaster mitigation not only improves preparedness but also strengthens trust networks within the community. Social capital, in this view, is a catalyst that allows communities to coordinate more effectively, with patterns of engagement that are collective and structured. If BMKG can facilitate this kind of engagement pattern, digital media that currently functions as a passive communication tool can transform into a collaborative platform that optimizes community contributions throughout the disaster mitigation cycle – from information gathering to assessing and evaluating the effectiveness of mitigation strategies (Ziari & Rajaei, 2024; Webster & Neal, 2024) [28, 27]. Critically, the main challenge in implementing social capital theory in disaster mitigation is how to change the attitude of the community from passive recipients of information to active contributors. This requires not only changes to BMKG's communication system but also a more inclusive approach in designing disaster mitigation strategies, such as involving communities in technology-based disaster simulations or virtual mitigation planning workshops through the BMKG application. This approach is supported by research by Su *et al*. (2024) [20], which shows the importance of using digital technology in increasing collective community involvement in disaster mitigation. In addition, BMKG can use data collected through the application to map community responses to disaster threats, which are then used to adjust communication and mitigation strategies more accurately (Su *et al*., 2024) [20].

5.2 Interpersonal Trust

In building interpersonal trust between BMKG and the community, the use of digital media, especially through the Instagram platform, is a strategic step that allows for two-way communication. BMKG proactively responds to direct messages and comments from the community as a form of transparency and commitment in an effort to build trust-based relationships. This effort is in line with the views of Rose and Elbaaly (2024) [18], who emphasized that open and responsive communication in times of crisis is an important element in creating strong interpersonal trust between institutions and the communities they serve. In disaster situations, this trust can strengthen community resilience, enabling a faster and more collaborative response in dealing with emergencies (Rose & Elbaaly, 2024) [18]. Meanwhile, Gheidar *et al*. (2024) [12] developed a trust framework that

integrates the concept of interpersonal trust in disaster support systems, where appropriate and responsive involvement in community feedback can strengthen collective trust in the decision-making process. In the context of BMKG, the internal data verification step before disseminating information not only ensures the reliability of the information but also builds credibility which has a direct impact on increasing public trust in the information conveyed (Gheidar *et al*., 2024) [12].

At the community level, interpersonal trust is crucial in strengthening social cohesion and facilitating effective cooperation during disasters. According to Ralisaona *et al*. (2023), strong interpersonal networks through direct community involvement can enhance collective engagement and community preparedness. This shows that trust between community members, as well as between communities and institutions such as BMKG, can be the foundation for essential social capital in creating an effective and sustainable mitigation system (Ralisaona *et al*., 2023). However, although BMKG's digital communication strategy has shown efforts to strengthen public trust, community participation in the validation and evaluation process of the information conveyed is still limited. In this regard, Thompson (2023) [21] highlights the importance of active community involvement in validating information and making decisions related to disaster mitigation. This involvement not only strengthens trust in institutions that handle disasters but also fosters a stronger sense of ownership and social solidarity within the community. By involving the community in the evaluation and validation process, BMKG not only expands the role of the community as recipients of information, but also develops them into critical partners in the disaster preparedness and mitigation system (Thompson, 2023) [21].

5.3 Community Network

The community network built by BMKG Lampung Province, especially through relationships with educational and government institutions, is an important foundation in expanding social networks and building the social capital needed for more inclusive disaster mitigation. Interaction with these institutions has the potential to strengthen the dissemination of information and increase community awareness and preparedness in facing disasters. However, this network is currently still limited to institutions that have direct access, so it does not yet cover the wider community. In this context, Efio *et al*. (2024) [10] emphasize that strong local social networks are very important in increasing adaptive capacity to disasters, especially in accelerating the dissemination of information and resources during emergencies (Efio *et al*., 2024) [10]. By building a more inclusive network, BMKG can leverage broader social capital to strengthen the responsive capacity of communities in dealing with disaster situations. Furthermore, Visave and Aldrich (2024) identify social capital as one of the key elements that can strengthen community resilience to natural disasters, such as floods. They show that strong social networks enable communities to share information and resources more quickly and efficiently during disasters. This suggests that solid social capital between BMKG and local communities will enable faster information dissemination and a more coordinated response in the face of disasters (Visave & Aldrich, 2024).

BMKG can use these findings as a basis for expanding networks and involving the wider community as active partners in disaster preparedness, not just as recipients of information. Furthermore, Purbandini *et al*. (2024) [16] highlight the important role of trust, social norms, and community networks in building social capital that is essential for disaster preparedness. According to them, interpersonal trust formed within community networks allows for better coordination in responding to disaster threats. This is very relevant to BMKG's efforts to develop closer relationships with the community, where direct community involvement in socialization and mitigation exercises can strengthen social cohesion and increase the effectiveness of coordination when a disaster occurs (Purbandini *et al*., 2024) [16]. In addition, Budhiana (2024) [7] discusses the importance of social capital formed through disaster training and socialization in strengthening community preparedness. The training and socialization help build networks that not only serve as communication channels but also as mechanisms for mobilizing collective action during crises. By developing more inclusive community networks, BMKG can strengthen the effectiveness of disaster communication and mobilize communities to act quickly during emergencies, which ultimately increases community resilience to disasters (Budhiana, 2024) [7].

6. Conclusion

Indonesia is one of the countries with the highest risk of natural disasters in the world, requiring community-based mitigation strategies and social capital to improve community resilience. This study reveals that three elements of social capital social participation, interpersonal trust, and community networks are key to effective disaster mitigation strategies in Lampung Province, especially in efforts made by BMKG. In terms of social participation, BMKG has utilized digital media such as Instagram and the BMKG application to facilitate rapid access to early warning information. However, community participation is still limited to being recipients of information without active involvement in decision-making or the formulation of mitigation strategies. By involving the community more actively, BMKG can optimize this participation to create a stronger culture of preparedness, where the community plays a role not only as a recipient, but also as a contributor in the mitigation process. Interpersonal trust between BMKG and the community is also a crucial element in disaster response. BMKG's efforts to build transparency through two-way communication on social media have helped build openness, although participation is still not fully inclusive. By inviting the community to participate in the evaluation and validation of information, BMKG can strengthen public trust in institutions, so that the community feels more involved and has a shared responsibility in disaster preparedness. In addition, a strong community network is another important aspect. Currently, BMKG has established a network through cooperation with educational institutions and the government, but this network is still limited to formal institutions. To achieve more comprehensive disaster preparedness, BMKG needs to expand this network, involving local communities and the general public. With a more structured and inclusive community network, BMKG can accelerate the distribution of information and support effective coordination during emergency situations. Overall, this social capital-based

approach shows that by strengthening social participation, interpersonal trust, and community networks, BMKG and government institutions in Lampung can increase community resilience.

7. References

1. Aldrich DP. Building resilience: Social capital in post-disaster recovery. University of Chicago Press, 2012.
2. Aldrich DP, Meyer MA. Social capital and community resilience. American Behavioral Scientist. 2015; 59(2):254-269.
3. Azad MAK, Uddin MS, Zaman S, Ashraf MA. Community-based disaster management and its salient features: A policy approach to people-centred risk reduction in Bangladesh. Asia-Pacific Journal of Rural Development. 2019; 29(2):135-160.
4. Bäck M, Kestilä E. Social capital and political trust in Finland: An individual-level assessment. Scandinavian Political Studies. 2009; 32(2):171-194.
5. Behera JK. Role of social capital in disaster risk management: A theoretical review. International Journal of Management. 2021; 12:221-233.
6. Bhandari H, Yasunobu K. What is social capital? A comprehensive review of the concept. Asian Journal of Social Science. 2009; 37(3):480-510.
7. Budhiana J. Strengthening social capital in an effort to build community preparedness in facing tsunami disaster through socialization and education. Jurnal Pengmas Kusuma Bangsa. 2024; 1(1):57-63.
8. Dynes R. Social capital: Dealing with community emergencies. Homeland Security Affairs. 2006; 2(2).
9. Engbers TA, Thompson MF, Slaper TF. Theory and measurement in social capital research. Social Indicators Research. 2017; 132:537-558.
10. Efio S, Sogbohossou EA, Magnon YZ, Hamaide B, Tossou RC, Sinsin BA. Vulnerability of agricultural households to human–wildlife conflicts around Pendjari Biosphere Reserve in Northern Benin. Land. 2024; 13(9):1473.
11. Faisal M, Nurul Qomariyah L, Fachrul K, Fresy N, Miftachul Arif Y, Nurhayati H, *et al*. Improving service quality through customer relationship management using the framework of dynamic model, October, 2023.
12. Gheidar Y, Lessard L, Yao Y. A vision to enhance trust requirements for peer support systems by revisiting trust theories. In 2024 IEEE 32nd International Requirements Engineering Conference (RE) (pp. 441-449). IEEE, June, 2024.
13. Jumiati IE, Budiati A. Analysis of policy strategy for empowerment of fisherman in Teluk Village, Labuan Sub-District, Pandeglang Regency. International Journal of Global Operations Research. 2024; 5(1):15-21.
14. Lochner K, Kawachi I, Kennedy BP. Social capital: A guide to its measurement. Health & Place. 1999; 5(4):259-270.
15. Min YANG, Sangkhiew N. Risk evaluation and mitigation strategies for Chinese investments in overseas public-private partnerships (Doctoral dissertation, Silpakorn University), 2024.
16. Purbandini L, Wahyono E, Prayoga RA, Fatimah S, Solekhah N, Hakim FN, *et al*. Sustainable livelihood diversification in the Merapi Volcano disaster-prone area. In Climate Crisis, Social Responses and Sustainability: Socio-ecological Study on Global Perspectives (pp. 621-644). Cham: Springer Nature Switzerland, 2024.
17. Ralisaona F, Randimbiarison JR, Mauluka C, Konate B, Ranjatoson R. Supporting preparedness and response to Cyclone Freddy in Madagascar—A contribution from the social and behaviour change communication.
18. Rose J, Elbaaly E. Cultivating resilience in chaos: Localization as a mechanism for sustainability and inner development in Syria's humanitarian crisis. Challenges. 2024; 15(1):11.
19. Shahparvari S, Bodaghi B, Roozbeh I, Mohammadi M, Soleimani H, Chhetri P. A cooperative (or coordinated) multi-agency response to enhance the effectiveness of aerial bushfire suppression operations. International Journal of Disaster Risk Reduction. 2021; 61:102352.
20. Su Y, Xuan Y, Zeng Q, Chen X. Reshaping collective reciprocal space and rules: The impact of digital network technology application on farmers' participation in collective action to respond to natural disasters-evidence from rural coastal border areas of China, 2024.
21. Thompson CM. Relational empowerment among public safety outreach workers and violence interventionists in US cities: A qualitative inquiry (Doctoral dissertation, Seton Hall University), 2023.
22. Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 tentang Penanggulangan Bencana.
23. Peraturan Kepala BNPB Nomor 4 Tahun 2008 tentang Pedoman Pembentukan Forum Pengurangan Risiko Bencana.
24. Peraturan Menteri Dalam Negeri Nomor 101 Tahun 2018 tentang Pengembangan Kapasitas Masyarakat dalam Penanggulangan Bencana.
25. Badan Nasional Penanggulangan Bencana. Laporan Tahunan BNPB 2023: Data dan Informasi Bencana. Jakarta: BNPB. Dapat diakses melalui, 2023. https://www.bnpb.go.id.
26. Pusat Data, Informasi dan Komunikasi Kebencanaan BNPB. Data Informasi Bencana Indonesia (DIBI). Jakarta: BNPB, 2023. Tersedia di https://dibi.bnpb.go.id.
27. Webster P, Neal K. Leave no one behind—Public health challenges for 2024. Journal of Public Health. 2024; 46(1):1-2.
28. Ziari K, Rajaei SA, Darabkhani R. Suitable approach for city flood crisis management: A case study of Ilam City. Sustainable Development of Geographical Environment. 2024; 5(9):72-89.