



Original Article

Interventive Policing In Natural Disaster Mitigation Through Integrated Technology Application Management In Pulang Pisau District

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Abstract:

Electronic Natural disasters in Indonesia from 2014-2023 have caused numerous casualties and infrastructure damage. Disaster mitigation and planning efforts need to be enhanced to reduce future damages. Although information technology such as the Lancang Kuning application, INA-Buoy, INA-CBT, PUMMA, LIPI-WISELAND, LEWS, and FEWS have been utilized for disaster mitigation, there are still weaknesses such as the vulnerability of sensor infrastructure and high operational costs. The role of the Indonesian National Police (Polri) in disaster management is crucial, including protecting lives and property, evacuation, and maintaining security in affected areas. The writing of this article uses a qualitative analysis method supported by institutional theory. The discussion results show that interventive policing is a proactive approach to law enforcement focusing on preventing crimes and disturbances through direct intervention before problems develop into more serious situations. In natural disaster mitigation in Pulang Pisau Regency, this approach involves the use of data and technology to predict and respond early to potential threats. Integrated technology application management becomes an important strategy, utilizing information and communication technology to enhance effectiveness in data collection, early warning, evacuation, and post-disaster recovery.

Keywords: Interventive Policing, mitigation, natural disasters, application management



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Introduction

Ecosystems are natural heritage that is very valuable for humans, but are now threatened by unsustainable actions. Climate change, pollution and loss of biodiversity are global challenges that require collective attention and effort ([Aty, 2024](#)). This

environmental imbalance has caused a series of destructive natural disasters, such as floods, forest fires, landslides and increasingly extreme storms ([Yudi, 2020](#)). The negative impacts of these natural disasters not only threaten human life, but also damage natural ecosystems, resulting in losses for various species ([Lola, 2022](#)). Although often ignored,

natural disasters are one of the challenges in sustainable development that require immediate attention and action ([Yudi, 2020](#)). Environmental imbalances due to climate change, pollution and loss of biodiversity are causing natural disasters to become more frequent and destructive ([Humphrey, 2013](#)). One of the natural disasters that continues to occur every year is forest fires, floods, landslides and various other disasters ([BNPB, 2007](#)). Document studies show that geographic conditions and ongoing climate change make Indonesia very vulnerable to various natural disasters, including landslides, floods, flash floods, earthquakes, tsunamis, tidal waves, tornadoes, volcanic eruptions, forest and land fires. , as well as drought. The threat of natural disasters can have a serious impact on the country's economy ([Akhmad, 2019](#)). Economic losses due to natural disasters are estimated to reach 0.66% to 3.45% of Gross Domestic Product (GDP) until 2030 if not handled seriously ([Reza, et al., 2024](#)).

Data shows that natural disasters in Indonesia from 2014-2023 have caused many victims and damage. Floods are the most frequently occurring disaster with the highest number of victims, while droughts, although less deadly, remain a serious concern. Earthquakes and tsunamis have a significant impact especially on the number of deaths, while volcanic eruptions cause many victims to disappear. Climate change also contributes to the increasing number of disasters with significant casualties. Apart from that, this natural disaster also causes major physical and economic damage. Infrastructure such as houses, educational facilities, health facilities and public facilities were damaged. People's livelihoods and economic resources are lost, affecting social and economic stability in the affected areas. Floods, landslides and tornadoes caused the greatest damage to homes and public facilities, while earthquakes and tsunamis damaged homes and health facilities. Although forest and land fires are rare, they cause major damage to land. This data shows the importance of improving disaster mitigation and planning efforts to reduce future damage.

From 15-22 February 2024, natural disasters occurred again in Indonesia with 13 flood locations, 3 tornado locations, 3 forest and land fire locations, and 2 landslide locations ([DataIndonesia.id, 2024](#)). This problem shows the inability of conventional systems to deal with natural disasters. Even though Indonesia is often faced with the threat of repeated disasters, there is still a lack of adequate inter-agency coordination, infrastructure readiness and disaster management skills. Prevention, preparedness and quick and effective response efforts are still lacking. Low public awareness of the importance of disaster risk mitigation also makes the situation worse. Therefore, a revolution is needed in the disaster management approach by integrating technology, capacity development, and active community participation to create a more adaptive and resilient system in facing future disaster threats ([Hardi and Ahmad, 2019](#)). Currently, Indonesia has adopted several information technologies to mitigate natural disasters. For example, the Lancang Kuning application is used to detect forest and land fires. INA-Buoy is a tsunami hazard monitoring system based on water pressure sensors on the seabed and provides early warning information. INA-CBT, another tsunami hazard monitoring system, is also based on sea water pressure sensors to provide early warning.

PUMMA is a tsunami hazard monitoring system based on sea level sensors. LIPI-WISELAND is a land movement monitoring system based on a wireless sensor network for early warning of land movement threats. LEWS is an early warning system for landslides on natural or artificial slopes. FEWS is a flood early warning system based on river water level sensors. Siquat is a multi-storey building health information system based on movement and deformation sensors to provide important information about the health of building structures during an earthquake ([Martha, 2022](#)).

However, although these technologies make an important contribution to disaster mitigation, there are several drawbacks that need to be considered. These weaknesses include the vulnerability of sensor infrastructure to damage or disruption, high operational and maintenance costs, dependence on energy resources and connectivity, as well as damage to sensor infrastructure due to environmental conditions or natural activities. Therefore, efforts are needed to continue to develop and improve these technologies by increasing infrastructure resilience and optimizing the use of existing resources, so that natural disaster mitigation can be more effective and responsive in the future. Apart from that, according to [Inong \(2023\)](#), an integrated approach is needed in managing natural disasters considering the complexity of the challenges faced. The role of the National Police is very important in maintaining order, providing protection and providing assistance to affected communities. This is in accordance with the mandate of Law no. 2 of 2002 concerning the National Police of the Republic of Indonesia, Law no. 24 of 2007 concerning Disaster Management, RI Presidential Decree no. 87 of 2020 concerning the Master Plan for Disaster Management for 2020-2044, Perkap Polri No. 17 of 2009 concerning Disaster Management, and BNPB Perkap no. 13 of 2010 concerning Search, Relief and Evacuation Guidelines. According to [Ilham \(2006\)](#), the police's task in handling natural disasters is very complex. They are responsible for protecting life and property, providing first aid to victims, evacuating residents, searching and rescuing victims, and maintaining the security of affected areas. The police also regulate traffic, prevent looting, control crowds, and register victims after disasters. They are involved in establishing first aid, organizing volunteers, and securing post-disaster repair routes. Disaster planning and civil defense are the main focus with effective command post control strategies.

Pulang Pisau Police in Central Kalimantan also has a similar role in handling natural disasters, especially forest and land fires and haze disasters. However, several problems in the field related to the role of the National Police in the Pulang Pisau Police jurisdiction include limited access and use of integrated information technology, low network capacity and speed, lack of integration with digital forensic investigation software, and a lack of monitoring and early warning systems. In addition, low workforce training and awareness, limited coordination between agencies, and gaps in risk understanding and resource mapping also hinder the effectiveness of disaster management. Efforts to improve technology, capacity development and active community participation are needed to create a more adaptive and resilient system in facing future disaster threats.

The problems mentioned above are in accordance with the findings of [Jajat \(2017\)](#), which shows that the lack of integration of information technology in Polri operations hinders efficiency in responding to natural disasters. The limited use of integrated information systems causes difficulties in data collection and coordination between National Police units and other institutions involved in disaster management. [Vira and](#)

[Fadlurrahman \(2020\)](#) also found that coordination between the National Police and other related institutions in disaster management was hampered by a lack of interoperability of information systems and a lack of infrastructure that supports efficient information exchange. These various problems show the urgency to transform the National Police to be more responsive and adaptive in facing the challenges of natural disasters effectively and efficiently. The use of integrated information technology is very important to strengthen the National Police's capacity to collect, analyze and distribute information quickly and accurately. By integrating sophisticated information technology systems, the National Police can improve coordination with related institutions and optimize the use of available resources. This transformation also includes increasing training and awareness for National Police personnel about the latest strategies and technology in disaster mitigation. The aim is to make the National Police more effective and efficient in responding to natural disasters, which in turn will protect and save people's lives and property.

The results of pre-research in the field show that the handling of natural disasters in Pulang Pisau Regency has not been well coordinated in the use of technological applications. This emphasizes the importance of police intervention to improve the situation. This intervention is expected to improve coordination and integration of integrated technology applications in disaster mitigation efforts. Therefore, the Pulang Pisau Police need to develop and implement an effective institutional strategy to ensure optimal use of technology in disaster management. This step will help overcome various obstacles, improve response and effectiveness in emergency situations, and ensure that information technology is utilized optimally to protect and improve community welfare. The main problem faced is the increasing complexity of natural disaster challenges due to climate change and unsustainable human activities, such as pollution and environmental damage. The impacts include significant physical and economic damage, as well as threats to human life and natural ecosystems. In addition, the Pulang Pisau Police are facing various obstacles in utilizing information technology for disaster mitigation, including a lack of coordination in the use of technology applications. Another problem is the lack of integration of information systems, limited infrastructure, and low workforce awareness about information security. Lack of coordination between the National Police and related institutions also hampers the effectiveness of responses to natural disasters. Therefore, this condition shows the need for police intervention to integrate integrated technology applications institutionally, so that the National Police together with stakeholders can increase responsiveness and adaptability in facing this challenge. The focus is on the use of integrated information technology, improving inter-agency coordination, as well as increasing awareness and training of National Police personnel on the latest strategies and technology in disaster mitigation.

In accordance with the explanation above, the title chosen in this research to answer this need is "Interventive Policing In Natural Disaster Mitigation Through Integrated Technology Application Management In Pulang Pisau District". This research aims to analyze how institutional interventional policing works in mitigating natural disasters through the application of integrated technology in Pulang Pisau district. Institutional theory is an approach in the social sciences that emphasizes the role of institutions in shaping social dynamics. These institutions, both formal and informal, provide the basis for the rules, norms, and procedures that govern the interactions of individuals, groups, and the structure of society as a whole. These institutions not only

provide a framework for human behavior, but also shape identities, values, and expectations that influence the way individuals think, feel, and act in various social situations ([Durkheim, 1893](#)). This thinking is applied in various scientific disciplines, including economics, sociology, and politics. Douglass C. North, an economist and institutional theory thinker, emphasized that institutions have an important role in determining the course of a country's economic and social development. This perspective asserts that changes in institutions can alter patterns of social and economic behavior, which in turn affect the development and stability of society as a whole. By understanding institutional theory, we can more deeply explore how institutional structures shape social order and direct socio-political evolution in continually changing contexts ([North, 1990](#)).

One of the main contributions to institutional theory comes from Douglass C. North with his famous work, *Institutions, Institutional Change and Economic Performance* ([1990](#)). North emphasized that economic, political and social institutions have a central role in shaping the course of the economy and societal development. He emphasized the role of rules, incentives, and policies in shaping the behavior of economic and political agents ([North, 1990](#)). The institutional theory approach also explores the concept of structuralism, which was popularized by Meyer and Rowan in their article, *Institutionalized Organizations: Formal Structure as Myth and Ceremony* ([1977](#)). They emphasize how formal structures in organizations often become rituals or symbols rather than operational realities, with the rules and procedures implemented not always reflecting actual function or efficiency ([Meyer and Rowan, 1977](#)). Institutional theory is also closely related to leadership theory, organizational change, social theory, and institutional economics. These concepts complement each other to provide a more comprehensive understanding of how institutions play a critical role in shaping and influencing behavior, decisions, and social dynamics in society.

Methods

This research is qualitative. According to [Creswell \(2019\)](#), It includes essential steps, such as formulating questions and procedures, collecting data from participants, analyzing data inductively from specific themes to general themes, and interpreting the meaning of the data. In other words, qualitative research methods aim to explain a phenomenon through in-depth data collection. The author will apply a qualitative descriptive approach. This approach emphasizes an in-depth description of a phenomenon, such as behavior, attitudes, or experiences, to understand the phenomenon's characteristics, context, and meaning without relying on numbers or statistics ([Moelong, 2008](#)). This means that information is collected through observation, direct interaction, or text evaluation and then analyzed narratively to gain a deeper understanding of the topic being written about. This research recommends Interventive Policing in mitigating natural disasters through integrated technology application management in Pulang Pisau Regency. The focus is to overcome the problem of lack of coordination between agencies, and low public awareness of disaster risk mitigation in Pulang Pisau Regency.

Results

Interventive policing is a proactive approach to law enforcement that focuses on

preventing crime and disorder through direct intervention before problems escalate into more serious situations. The goal is to detect, prevent and address emerging threats or risks quickly and effectively. This approach involves using data and technology to predict and respond early to potential security threats and social disruption. In interventionist policing, the police not only react to events after they occur, but also seek to identify early signs of potential problems and take necessary preventive measures, including various activities such as increased patrols in high-risk areas, use of technology for monitoring, and collaboration with communities to detect and respond to threats. Integrated technology application management is a strategy for utilizing information and communication technology (ICT) in efforts to mitigate natural disasters. The use of ICT can help increase effectiveness and efficiency in various aspects, such as: collecting data and information about potential natural disasters, such as monitoring weather, geographical conditions and disaster vulnerability, early warning to the public about potential natural disasters, evacuating and rescuing victims of natural disasters, distribution of aid and logistics to victims of natural disasters, and post-disaster recovery through reconstruction and rehabilitation.

In Pulang Pisau Regency, the role of formal institutions such as the National Police, BPBD and TNI in mitigating natural disasters is considered very important, where this is reflected in the emphasis of the Pulang Pisau Regional Government through Pulang Pisau Regency Regent Regulation Number 14 of 2023 concerning the Regional Disaster Management Agency, which emphasizes the need for effective collaboration and coordination between institutions in disaster mitigation efforts. AKP Tadik S.H., M.M., Head of Operations for the Pulang Pisau Police, explained that they are working with BPBD and TNI to ensure that mitigation is implemented according to procedures. Apart from formal institutions, non-formal institutions such as local communities also have an important role in providing initial assistance and moral support to disaster victims. According to Aipda Meindra Setiawan, Pulang Pisau Police Command Center Operator, local communities are often the first to respond to disasters by providing temporary assistance before the official team arrives. However, although the collaboration between formal and non-formal institutions in Pulang Pisau Regency aims to create a comprehensive and effective response in disaster mitigation, the results of the document study show that this integration has not been fully successful in increasing the effectiveness of mitigation. Pulang Pisau District is still classified as having high risk in the disaster risk index, indicating the need for increased collaboration to reduce negative impacts and speed up recovery from natural disasters.

AKP Tadik S.H., M.M., Head of Operations for the Pulang Pisau Police, explained that the rules and norms applied in interventional policing in Pulang Pisau Regency include disaster regulations regulated in law and regional policies to support preparedness and rapid response to disasters. According to him, this protocol is very important to ensure that every action taken complies with security and safety standards. Meanwhile, the Acting Regent of Pulang Pisau, Hj Nunuk Andriani S.E.M.M., explained that the regional policy they implemented was aimed at empowering the community to be more prepared and responsive in facing disasters. This policy includes education and training programs to increase citizens' awareness and skills in dealing with disasters. However, the findings from the research show that concern for the environment and safety in Pulang Pisau still needs to be improved. This can be seen from the findings of corruption cases at BPBD Pulang Pisau Regency in 2022, which caused significant losses,

as well as corruption cases in the economic reconstruction or rehabilitation program in 2020 with losses reaching significant amounts.

This problem indicates that institutional values as proven by the existence of corruption cases are still the main obstacle in disaster management efforts in Pulang Pisau. Even though there are policies and programs from local governments to increase community preparedness and skills, realization in the field is hampered by corrupt practices. Therefore, the success of this policy really depends on the integrity of its implementation in the field and the commitment of all parties to eradicate corruption for the sake of mutual prosperity and safety. In mitigating natural disasters through integrated technology applications in Pulang Pisau Regency, Pulang Pisau Police has implemented interventional policing by utilizing new technological adaptations to increase the effectiveness and efficiency of disaster mitigation. The use of integrated technology applications enables real-time disaster monitoring, fast communication, and better coordination between related institutions. Pulang Pisau Police Command Center Operator, Aipda Meindra Setiawan, revealed that technology such as the Lancang Kuning Application has been used to facilitate situation monitoring and quick decision making in disaster mitigation. However, in its implementation, there are obstacles that arise related to technology integration that is not yet optimal. Although each institution has its own applications and technology, this lack of integration hinders the efficient exchange of information between related institutions. This can cause delays in response and coordination when a disaster occurs, as stated by Aipda Meindra Setiawan in his interview. He also emphasized that multiple technologies used separately pose challenges in officer training and coordination, as each platform has different features and uses. This can result in confusion and misalignment in disaster management in the field.

There are other challenges in mitigating natural disasters, including ineffective coordination between the National Police and other institutions such as BNPB, TNI and local governments. Factors such as complex bureaucracy, strict regulations, and low public awareness regarding disaster mitigation also influence the smooth running of operations in the field. Apart from that, damaged infrastructure and limited access to transportation are also serious obstacles in the distribution of logistics and aid to remote areas affected by disasters. Based on the results of a document study on Article 26 of the Pulang Pisau Regent's Regulation Number 14 of 2023 concerning Position, Organizational Structure, Duties and Functions and Work Procedures of the Regional Disaster Management Agency, the existence of this regulation shows that in efforts to mitigate natural disasters in Pulang Pisau, the principles of coordination, integration, simplification and synchronization both vertically and horizontally must be implemented in BPBD and other agencies in accordance with their respective tasks. Although formal structures are in place, operational realities require continuous adjustment and improvement.

In line with this explanation, Head of Pulang Pisau Regency BPBD, Mr. Osa Maliki, SSPT. M, Si., revealed the obstacles in integrating natural disaster mitigation. The main challenges include a lack of effective coordination with other agencies such as BPBD and local government institutions, limited human resources, equipment and funds needed for a fast and optimal response, as well as internal and external communication barriers. He emphasized that the integration of data and information that is not yet optimal as well as differences in standard operational procedures and task priorities between

agencies are also obstacles to operational synchronization. The interactions between various stakeholders in disaster mitigation in Pulang Pisau Regency have complex dynamics. Lack of effective coordination with other agencies, limited resources, and infrastructure constraints are the main challenges in responding quickly and optimally to natural disasters. Even though there have been efforts and policies to improve preparedness and response to disasters in Pulang Pisau Regency, implementation in the field is still faced with various obstacles. Head of Operations for the Pulang Pisau Police, AKP Tadik S.H., M.M., said that the adoption of technology such as GIS and early warning systems to increase the effectiveness of disaster mitigation is often hampered by limited infrastructure and suboptimal technology integration.

The Acting Regent of Pulang Pisau, Hj Nunuk Andriani S.E.M.M., emphasized strategies to increase disaster mitigation efforts in his region, including investment in technological infrastructure, increasing public awareness, and increasing training for human resources. He also identified social factors that influence the success of disaster mitigation in the area, including support from traditional institutions and local institutions as well as the commitment of local governments in implementing effective mitigation strategies. Even though it is known that social factors influence the success of disaster mitigation in Pulang Pisau Regency, Tekoson S. Sos., Head of Prevention and Preparedness, in his interview revealed that to achieve effective disaster mitigation, several important supporting conditions need to be considered. This includes improving technological infrastructure, educating the public about GIS technology, and increasing human resource capacity. Apart from that, commitment and leadership from local governments is also an important factor in supporting holistic and sustainable mitigation strategies

AKP Tadik S.H., M.M., Head of Operations for the Pulang Pisau Police, in his interview, underlined that people's hedonic motivation in disaster mitigation is often triggered by personal satisfaction and satisfying experiences in helping others. According to him, personal success in mitigation efforts can increase motivation for community participation. Hendri Aroyo, Head of the Pulang Pisau LH Department, said that the disaster mitigation program in Pulang Pisau Regency provides significant benefits in reducing the risk of disaster impacts through increasing public awareness, utilizing technology, and building disaster-resistant infrastructure. Aswaludin from Kadaops II Manggala Agni Kapuas-Pulang Pisau, explained that people's habits in dealing with disasters, such as participation in training and use of technology, have a significant impact on disaster preparedness and response. Catur Winarti, S.P., Head of BMKG Class I Tjilik Riwut, emphasized that the habit of using technology applications in disaster mitigation provides significant benefits in improving response to disasters through real-time information and early warning.

AKP Tadik S.H., M.M., also explained that the Pulang Pisau Police implemented micro, mezzo and macro approaches in interventional policing for disaster mitigation, including individual education, joint training and government policy coordination. Aipda Meindra Setiawan, from the Pulang Pisau Police Command Center Operator, emphasized the use of technology applications in interventional policing strategies to monitor disasters in real-time and speed up emergency responses. According to AKP Sugiarto S.H., from the Pulang Pisau Police Criminal Investigation Unit, the main aim of intervention in disaster mitigation is to minimize losses and ensure community safety, as well as speed up the recovery process. Dandim Kuala Kapuas, Lt. Col. Inf. Khusnun Dwi

Putranto, S.E., emphasized the importance of cross-sector and institutional collaboration in disaster mitigation efforts to build community resilience against disaster threats.

Institutional interventional policing through integrated technology application management is the right approach to increase effectiveness and efficiency in natural disaster mitigation efforts in Pulang Pisau Regency. Institutional interventional policing in natural disaster mitigation through integrated technology application management in Pulang Pisau Regency can be implemented through several strategic steps, including:

1. Technology Infrastructure Development

Build and strengthen information technology infrastructure in remote areas to ensure good connectivity. Integrating various technology systems for mapping, monitoring and early warning of disasters so that data can be accessed and analyzed in real-time.

2. Training and Education

Carrying out educational and outreach programs to increase public awareness and knowledge about the use of GIS technology and early warning systems. Provide regular training to officers regarding the use and management of technology applications for disaster monitoring and emergency response.

3. Technology Application Management

Develop integrated technology applications that can provide real-time information, early warnings and evacuation guidance. Optimizing the use of data obtained from applications for risk analysis, planning and coordinating disaster mitigation.

4. Inter-Agency Coordination

Building solid cooperation between government agencies, TNI, Polri, non-government organizations and local communities for effective coordination. Establish an emergency response team consisting of various parties to ensure a fast and coordinated response when a disaster occurs.

5. Holistic Approach

Focus on individual intervention through personal education and dissemination of relevant information. Engage communities in joint exercises and disaster simulations to strengthen collective preparedness. Develop government policies that support disaster mitigation, including budget allocation and infrastructure development.

6. Evaluation and Continuous Development

Carrying out regular monitoring and evaluation of the effectiveness of technology applications and disaster mitigation programs. Make adjustments and improvements based on evaluation results to ensure sustainability and improve the quality of disaster mitigation.

Interventive policing is one of the important disaster mitigation strategies to be implemented in Pulang Pisau Regency. Implementing this strategy can help reduce the risk and impact of natural disasters, as well as increase the effectiveness of disaster emergency response. Integrated technology application management also plays an important role in supporting the implementation of interventional policing. With these steps, institutional interventional policing on natural disaster mitigation through integrated technology application management can be implemented effectively in Pulang Pisau Regency, increasing preparedness and response to disasters, and strengthening

community resilience to possible disaster threats.

Conclusion

Interventive policing is a proactive approach to law enforcement that focuses on preventing crime and disorder through direct intervention before problems escalate into more serious situations. In mitigating natural disasters in Pulang Pisau Regency, this approach involves the use of data and technology to predict and respond early to potential threats. Integrated technology application management is an important strategy, utilizing information and communication technology to increase effectiveness in data collection, early warning, evacuation and post-disaster recovery. Although there are challenges such as suboptimal technology integration and corrupt practices that hinder policy implementation, collaborative efforts between formal and non-formal institutions and support from local communities are expected to improve disaster preparedness and response. The implementation of institutional interventional policing through integrated technology application management is expected to strengthen community resilience and reduce the negative impacts of disasters in Pulang Pisau Regency.

Suggestion

To increase the effectiveness of institutional interventional policing in mitigating natural disasters through integrated technology application management in Pulang Pisau Regency, several suggestions that can be made are: 1) Build and strengthen information technology infrastructure in remote areas to ensure good connectivity. Integrating various technology systems for mapping, monitoring and early warning of disasters so that data can be accessed and analyzed in real-time; 2) Hold educational and outreach programs to increase public awareness and knowledge about the use of GIS technology and early warning systems. Provide regular training to officers regarding the use and management of technology applications for disaster monitoring and emergency response; 3) Develop integrated technology applications that can provide real-time information, early warnings and evacuation guidance. Optimizing the use of data obtained from applications for risk analysis, planning and coordinating disaster mitigation; 4) Build solid cooperation between government institutions, TNI, Polri, non-government organizations and local communities for effective coordination. Establish an emergency response team consisting of various parties to ensure a fast and coordinated response when a disaster occurs; 5) Focus on individual intervention through personal education and dissemination of relevant information. Engage communities in joint exercises and disaster simulations to strengthen collective preparedness. Develop government policies that support disaster mitigation, including budget allocation and infrastructure development; 7) Conduct regular monitoring and evaluation of the effectiveness of technology applications and disaster mitigation programs. Make adjustments and improvements based on evaluation results to ensure sustainability and improve the quality of disaster mitigation; 8) Implement firm steps to eradicate corruption in disaster mitigation programs and policies. Increase transparency and accountability in the management of funds and resources allocated for disaster mitigation; 9) Strengthen policies and regulations that support interventional policing and the use of technology in disaster mitigation. Improve coordination

between government agencies to ensure consistent and effective policy implementation.

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