The Role Of Collaborative Governance In Indonesian Disaster Management

Peran Tata Kelola Kolaboratif Dalam Manajemen Bencana Di Indonesia

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Abstract

Natural and non-natural disasters are unavoidable in Indonesia because the country's geographical area causes it to be threatened with floods, earthquakes, volcanoes, and tsunamis. Therefore, this study aims to determine the importance of collaborative governance in disaster management. This study used a qualitative approach with literature methods and secondary data to explore the role of collaborative governance in Indonesian disaster management. The results showed that all emergency mitigation requires coordination between government and non-government agencies. Meanwhile, the pre-disaster as one of the disaster management phase enable collaborative governance to create a disaster-resilient community, while the post-disaster is performed by applying a community-based recovery approach and assistance cooperation. Furthermore, weak coordination and leadership are factors affecting the collaboration process.

Keywords: natural disasters, collaborative governance, disaster management, pre disaster, post disaster

Abstrak

Bencana alam dan non-alam tidak dapat dihindari di Indonesia karena kondisi geografis negara yang menyebabkannya terancam oleh banjir, gempa bumi, gunung berapi, dan tsunami. Oleh karena itu, penelitian ini bertujuan untuk mengetahui pentingnya tata kelola kolaboratif dalam penanggulangan bencana. Penelitian ini menggunakan pendekatan kualitatif dengan metode literatur dan data sekunder untuk mengeksplorasi peran tata kelola kolaboratif dalam penanggulangan bencana di Indonesia. Hasil penelitian menunjukkan bahwa semua mitigasi darurat memerlukan koordinasi antara lembaga pemerintah dan non-pemerintah. Sementara itu, prabencana sebagai salah satu tahapan penanggulangan bencana memungkinkan tata kelola kolaboratif untuk mewujudkan masyarakat tangguh bencana, sedangkan pascabencana dilakukan dengan menerapkan pendekatan pemulihan berbasis komunitas dan kerja sama bantuan. Selain itu, lemahnya koordinasi dan kepemimpinan menjadi faktor yang mempengaruhi proses kolaborasi.

Kata kunci: bencana alam, tata kelola kolaboratif, manajemen bencana, pra bencana, pasca bencana

Introduction

Natural and non-natural disasters are unavoidable in Indonesia because the country's geographical area causes it to be threatened with floods, earthquakes, volcanoes, and tsunamis. The destruction caused by natural disasters has a wide impact involving the loses of property, shelter, and even life. In the last 5 years, Indonesia encountered 17,494 natural disasters and become the country that experience the most in 2020 with 4,886 events. The most frequent emergencies were tornadoes, floods, and landslides with 5,561, 4,996, and 3,969 incidents respectively. The following graph illustrates the trend of natural disasters over the last 5 years.
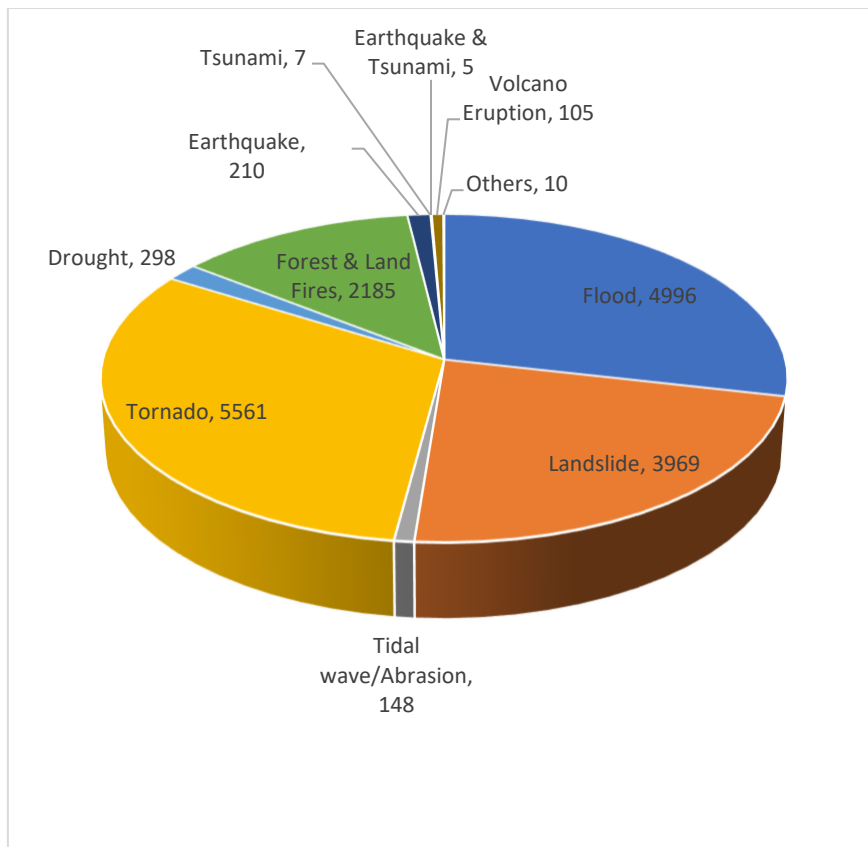

Figure 1. Trends in Disaster Occurrence in the Last 5 Years in Indonesia

Source: www.dibi.bnpb.go.id (reprocessed data), accessed on 21 October 2021

Disaster management is efforts and measures used to prevent, tame or mitigate, rescue, rehabilitate, and reconstruct disaster before, during, and after the occurrence (Pribadi and Meranti, 1996). Kusmiati (2005) showed that it is an institutionalized effort directed at preventing and minimizing losses as well as increasing community capacity

to deal with the incidents. The International Federation of Red Cross and Red Crescent Societies defined disaster management as "the organization and management of resources and responsibilities that handle all humanitarian aspects of emergencies including preparedness, response and recovery to lessen the impact of disasters" (www.ifrc.org, accessed on March 21, 2019). The following chart illustrates the phases of disaster management.
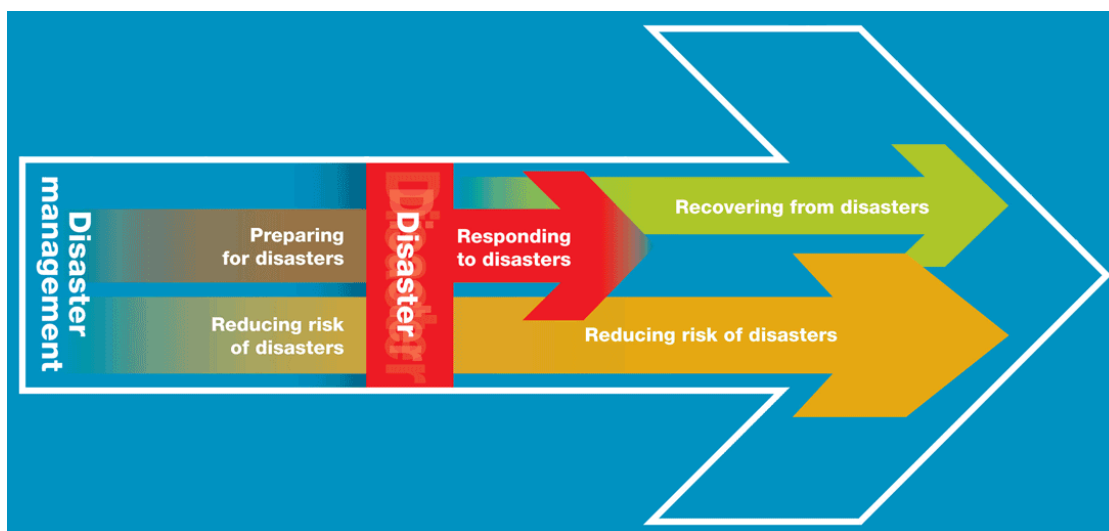
Figure 2. Phases of Disaster Management
Source: www.ifrc.org, (accessed on March 21, 2019)

Currently, the increased recognition of good governance serves as an enabling factor for disaster management because it promotes collaboration at all levels of authority. Meanwhile, the Global Assessment Report on DRR (UNISDR, 2011) highlighted poor leadership to be the main cause of this mitigation. Walker *et al*. (2014) characterized good governance as the move from the centralized authority to the involvement and collaboration of diverse actors, as well as the distribution of responsibilities between the state and others.

The study of Andrew, *et al.* (2015) showed the importance of coordination between government and organizations in emergency mitigation. Furthermore, political institutions and the participation of the federal government in terms of funding affect the decisions made by local officials. According to Kusumasari and Alam (2012), collaborative governance at all levels of authority plays an important role in obtaining

good results during and after the disaster. Therefore, this study aims to seek the role of coordinated leadership in Indonesian disaster management.

Research Methods

This study used a qualitative approach with literature methods and secondary data to explore the role of collaborative governance in Indonesian disaster management. Data were collected from journals and news articles issued by the National Disaster Management Agency to discuss coordinated leadership and emergency mitigation, as well as statistical data on disaster from 2015 until 2020.

Results And Discussion

Disaster Management and Collaborative Governance

According to Carter (2008), disaster is "an event, natural or man-made, sudden or progressive that causes severe damages to the community." Therefore, disaster management is a dynamic process consisting of classic functions including planning, organizing, staffing, leadership, and oversight. It also involves organizations that work together to perform disasters prevention, mitigation, preparedness, response, and recovery. The study of Carter (2008) showed that disaster management is "an applied science that uses systematic observation and analysis for prevention, mitigation, preparedness, emergency response, and recovery." Coppola (2007) affirmed that it consists of 4 components including:

1) Mitigation involves efforts to reduce or eliminate the possibility or consequences of a disaster. Also, it helps to treat hazards in a way to minimize their impact on the environment.

2) Preparedness is related to preparing communities against disasters by making available the tools and equipment needed to increase their chances of survival and minimize financial and other losses.

3) The response involves taking action to reduce or eliminate the impact of a disaster and prevent more losses from occurring. Meanwhile, assistance becomes one of the response components.

4) Recovery is concerned with returning the lives of disaster victims to their normal state. This recovery usually begins after the emergency response phase ends and lasts for months and even years afterward.

According to Waugh and Streib (2006, p. 131), disaster management consists of 4 main phases including: mitigation to reduce threats, risks, and vulnerabilities; preparedness by emphasizing planning and training; response in terms of search and rescue process, as well as recovery which usually refers to restoration of life and basic services. The study of McEntire (2006) suggested that these phases need to be understood and interpreted as a linear process because it is recognized as interrelated areas of function. However, mitigation and preparation lead to proactive actions in dealing with disasters because the reduction strategies implemented in the pre-disaster stage affect the community and government responses to the incident (Alesch *et al*, 2009; Kapucu and Ozerdam 2013; and Phillips 2009). The study of Derthick (2007) showed that emergency mitigation requires coordination between government agencies that made decisions quickly.

Therefore, collaborative governance enables the public and private sectors to be involved in the decision-making process based on consensus (Ansell and Gash, 2007; Emerson *et al*., 2012; Kapucu, 2012). According to Moynihan (2005), leadership is a network that involves stakeholders with different skills, abilities, and resources because it becomes popular in complex institutional structures to provide distributed knowledge across agencies and sectors.

Ansel and Gash (2007, p. 544) defined collaborative governance as:

> "A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative to make or implement public policy or manage public programs or assets"

Therefore, Ansell and Gash (2007, p. 544-545) developed the following criteria from collaborative governance (a) the forum is initiated by public institutions; (b) participants are non-governmental actors; (c) participants need to be directly involved in policymaking and not merely "consult" with the government; (d) the forum need to be formally organized and have regular meetings; € policies taken are based on consensus; and (f) collaboration have to focus on public policy or management.

Meanwhile, Emerson, Nabatchi, and Balogh (2011, p. 2) defined collaborative governance as:

> "*The processes and structures of decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private, as well as civic spheres to perform a purpose that tends not to be accomplished* "

Emerson, Nabatchi, Balogh (2011, pp. 5-6) developed a Collaborative Governance Regime to describe the dynamics and processes in coordinated leadership. The use of 'regime' is because it represents public policymaking to prevailing patterns of behavior and activity. However, the model developed in the CGR consists of 3 dimensions including: (a) the context system that functions as a host of political, legal, social, economic, environmental, and other influences; (b) CGR as a mode or system for public decision-making; and (c) dynamics of collaboration.

Subsequently, Stoker (1998) identified five propositions including the structure comprised of governmental and non-governmental agencies; boundary ranges in dealing with public issues; power and resource dependencies between different agencies; a self-regulated network; and the capacity as well as the power of non-governmental agencies to achieve better outcomes. Agranoff (2006, 2007) suggested that collaborative governance takes the form of less binding relationships that involve mandates or other forms of formal partnerships. Also, it requires the achievement of common goals and joint decision-making through efforts and relationships between organizations and different sectors (Agranoff and McGuire, 2003; Bardach, 1998; Bryson *et al*., 2006).

In terms of disaster management, collaborative governance is the collective effort of each stakeholder in recovering from disasters. According to Drabek and McEntire (2002), Kapucu and Garayev (2012), as well as Waugh and Streib (2006), coordinative networks are important in emergency mitigation and response. Meanwhile, disaster management deals with structural problems related to response control and recovery systems that are traditionally rigid with a closed chain of command (Birkland, 2007; Kapucu, 2006, 2008; Kapucu *et al*, 2010; and Ward and Wamsley 2007). Collaborative governance is used in emergency mitigation due to the damages that exceed a certain area or jurisdiction. Waugh and Streib (2006) showed that this new governance become important in the national disaster management with the consensus process as the rules.

Therefore, emergency mitigation changed from a top-down bureaucratic to a more flexible network-oriented model to support coordination between organizations.

The Implementation of Collaborative Governance in Disaster Management

The implementation of collaborative governance is shown based on the disaster management phases that were grouped into pre-disaster and post-disaster. Meanwhile, the pre-disaster consists of mitigation and preparation, while the post-disaster comprises of response and recovery. The following is an explanation of collaborative governance in the two phases.

a. Pre-Disaster Phase

In this phase, mitigation and preparation help to reduce disaster risk by increasing community resilience. According to Dwirahmadi (2016), emergency mitigation is a systematic effort to reduce exposure to hazards, vulnerability, community and property, wise management of land and the environment life, as well as increase readiness for future events. However, the UNISDR as the main organization coordinating international efforts in risk mitigation help to build the countries' resilience. This organization's vision is to empower communities to become more resilient in dealing with the impacts of natural damage to reduce human, economic, and social losses (United Nations, 2001, in Dwirahmadi, 2016). Therefore, UNISDR identified the main objectives including to (1) increase public awareness; (2) promote commitment from public authorities; (3) stimulate cross-disciplinary and cross-sectoral partnerships; (4) expand the risk reduction network; and (5) increase scientific knowledge that underlies the causes of disasters (Dwirahmadi, 2016).

Meanwhile, disaster-resilient functions as collaborative governance that develop community capacity through adaptive management and continuous learning (Comfort, Boin, & Demchak, 2010; Kapucu, Hawkins, & Rivera, 2013). The study of Kapucu (2006) showed that coordination and leadership tend to spur the ability of organizations and stakeholders to adjust and adapt their evolving relationships in a dynamic disaster environment.

However, resilience is created by communities, individuals, institutions, and organizations through the exercise of deliberate choices and actions. Two important steps

facilitate the development and implementation of disaster policies leading to community resilience after the incident. First, state and local governments need to enforce mandates on emergency mitigation, while the second showed that state and local governments have to collaborate with all relevant stakeholders while planning on how to deal with disasters. According to Kapucu and Sadiq (2016, p. 58), this type of partnership needs to focus on identifying a comprehensive list of recovery goals for the whole community.

Therefore, an effective disaster-resilient does not only involves government agencies at all levels, but also stakeholders including non-profit organizations, religious groups, private sectors, individuals, families, and communities (Federal Emergency Management Agency [FEMA], 2011 in Kapucu, 2014 p. 46; Kapucu *et al.*, 2013). These organizations work with others to share information and resources as well as to build disaster-resilient communities. Therefore, this process establishes and develop multi-level emergency mitigation not only includes inter-governmental but also inter and cross-sectoral, as well as partnerships. These disaster networks work with roles and functions defined by government planning and policy documents to encapsulate informal and community partnerships characterized by flexible communication structures and channels. Furthermore, this perspective highlights the importance of multi-level collaborative governance capacities, adaptive management, as well as continuous learning to build disaster-resilient communities.

According to Sumarharum *et al.* (2014), disaster management is performed through the collaboration between communities, government, and agencies in Jakarta. This is because mandates emerge directly from the highest levels of government to the lowest. Thus, collaboration emerges among government agencies and at the regional level by the National Disaster Management Agency as well as the Regional Disaster Management Agency respectively.

The study of Jha and Stanton-Geddes (2013) emphasized the importance of coordination across different levels of government and community by developing information on disaster management. Therefore, the collaborative mechanism of emergency mitigation in Jakarta involves a combination of top-down and bottom-up to allow government agencies to coordinate with the lowest level, while the community feedback and information are conveyed to the federal government. Although communication continues to take place between communities and different levels of

government, but the decision is not shared in a bottom-up manner. The study of Sumarharum *et al.* (2014) showed that the authority of command is still held by following the top-down chain.

However, Sunarharum (2020) suggested that the public perception to adapt and live with floods is strengthened because there is a two-way communication between at-risk communities and the Jakarta Provincial Disaster Management Agency in responding to the incident. This condition makes it difficult for the government to implement the flood mitigation plan because people feel reluctant to move.

Furthermore, a collaboration which allows stakeholders to participate in reporting and monitoring data helps to build a disaster-resilient community. In 2017, the Flood Monitor application enable all government agencies to share information including water levels at sluice gates and water pump operations. However, this application was unable to connect data in the Jakarta Province with other regions. According to Rahmayanti (2020), data integration regarding floods or other disasters at the national level is only available in the Inarisk application which contains static data including affected populations, potential physical, and economic, as well as environmental losses throughout Indonesia.

Moreover, Petabencana.id is another information system that demonstrates collaboration in emergency mitigation because it is a public sector innovation designed to improve information quality. This application is also supported and implemented within 50 actors drawn from government, universities or intellectuals, international institutions, and local communities. Petabencana.id has made much progress in sensitizing and socializing the importance of disaster management by developing and implementing an early warning system to reduce and educate the adverse effects of flooding in affected areas and communities in Jakarta (Hidayat, 2020).

In the pre-disaster phase, collaborative governance helps to build a disaster-resilient community but later leads to cross-border and cross-sectoral as flexible coordination between government and non-government agencies. Subsequently, this development serves as a medium for disseminating and gathering information from the community to higher levels of government.

b. Post-Disaster Phase

The post-disaster phase consists of response and recovery during as well as after the occurrence of disaster respectively. Meanwhile, the response is where important decisions are made with constraints including limited resources and time, while the recovery requires coordination between the same sectors. In the recovery phase, decisions are important but more resources and time are available to government agencies. Waugh and Streib (2006) suggested that recent disasters have changed the long-term recovery because its increasing importance is reflected in the overall contingency planning effort. Also, the "link recovery with economic development and addressing long-term social as well as economic problems exacerbated by disasters" is another emphasis that makes recovery a lengthy and thoughtful process rather than being advocates of rapid improvement. Comfort *et al*. (2010) argued that recovery is not an ordinary disaster management function because non-traditional players including housing, public works, urban planning, and various private companies have to deal with infrastructure development. This tends to allow collaboration to pose a challenge to the community but needs to be taken seriously.

The Whole Community approach made by the Federal Emergency Management Agency or the United States Federal Disaster Management Agency in 2005 showed the coordinated leadership in the post-disaster phase. However, citizens, government agencies, private and non-profit organizations, community leaders, and practitioners collectively decide on how to improve the capabilities of their communities to build resilience and strong social structures (FEMA, 2011a in Kapucu, 2014 p. 47). The Whole Community approach followed during the preparedness and mitigation stage helps to improve the response and recovery as partnerships and relationships are built between community players and institutions (FEMA, 2011a, in Kapucu, 2014 p. 47).

Kapucu (2012a) also showed that the implementation of multi-jurisdictional and cross-sectoral partnerships in a community enables the functions and data sources for coordination to become easier in disaster management phases. According to Kapucu (2009), collaborative planning and programs initiated by the government focused more on improving the response in managing disasters compared to the recovery stage. The emphasis here helps to create healthy relationships between the institutions and entities to enable an effective and enhanced response.

In Indonesia, the agencies involved in the Whole Community approach are used in the disaster management process despite being dominated by the government. The study of Warganegara & Samson (2020) showed that there is 6 coordinated leaderships but only the government and non-government actors are visible while responding to the tsunami in Lampung Province. Therefore, disaster response is less characterized by consensus than overlapping action where each group works individually leaving the likelihood that some victims are overlooked while others receive disproportionate attention depending on their position. Warganegara & Samson (2020) showed that elements of flexibility and egalitarianism need to be included in the creation of a collaborative governance model of the post-tsunami response in Lampung Province. Meanwhile, flexibility enables agencies to react and adapt to sudden changes as well as unpredictable situations without being constrained by institutional bureaucracies. According to Warganegara & Samson (2020), egalitarianism closely involved local communities in the decision-making processes because they are most familiar with their environment.

Furthermore, collaboration in the provision of assistance is another thing needed in the post-disaster phase. This is mainly performed while the federal and local governments provide technical as well as non-technical assistance to the community. Also, this assistance is carried out through collaboration between the private sector or non-governmental agencies in providing public services needed by disaster victims. However, Rumah Zakat is an organization that offers humanitarian assistance by a partnership with more than 50 companies and communities in Indonesia. In 2021, 29 disaster response action points were performed by this organization's volunteers and are spread across 21 Cities in 14 Provinces with a total of 8,160 beneficiaries. Moreover, Rumah Zakat focuses on 5 disaster locations including the crash of the Sriwijaya Air SJ 182 plane, the Sumedang landslide, the West Kalimantan flood, the South Kalimantan flood, and the West Sulawesi earthquake (Andriyawan, 2021).

The federal government assistance to the regions is not only material but also consultation/advice to the local officials. According to Ansell and Gash (2007), advisory committees are examples of collaborative governance arrangements because the suggestions given by members are closely related to the decisions made. This form of

governance is common in the recovery phase of disaster management while different agencies and jurisdictions come together to revitalize as well as redevelop plans and programs.

However, collaboration plays an important role in the relationship between government and non-government agencies while responding to the recovery and reconstruction phase, as well as assisting the victims. This does not only assist all stakeholders and volunteers working together to perform reconstruction or rehabilitation but also affects communities through recovery trauma (Riaman, 2021). Table 3.1 shows the role of collaborative governance in Indonesian disaster management.

Factors Affecting the Implementation of Collaborative Governance in Disaster Management

The implementation of collaborative governance in disaster management poses a challenge to the community. However, ineffective coordination between the agencies involved is an influencing factor because of their unclear roles and responsibilities, as well as the lack of clarity in the laws and regulations. The study of Comfort, *et al.* (2010) showed this while looking at the aftermath of Hurricane Katrina that lack of collaboration occurred not only in the recovery phase but also in the implementation stage where different government jurisdictions were not aware of the roles and responsibilities of one another. Furthermore, the imbalance of the roles between agencies is one of the obstacles in coordinated leadership because the government is regarded as the final decision-maker. In Indonesia, the coordination process is unable to run optimally because of its weaknesses, sectoral ego, and high silo mentality. The study of Dyah and Prasojo's (2020) on post-earthquake response in Pandeglang and Lebak, as well as Banten showed that it is still in a weak position. This is indicated that not all districts/cities have disaster management regulations because there is a lot of miscoordination between government and non-government agencies. Also, disaster mitigation is unable to run due to a lack of community involvement and sectoral egos (Dyah & Prasojo, 2020).

Leadership is another influencing factor because it becomes governance networks where public officials and leaders in the community come together to mobilize, facilitate, and implement structures of collaboration (Ansell and Gash 2007; Kapucu 2012b; Moynihan 2005). This is to achieve the goals set and take responsibility by involving all

stakeholders in a freeway (Wallis and Gregory, 2009). The study of Ansell and Gash (2007) showed that leadership is important in establishing and maintaining clear ground rules, building trust, facilitating dialog, and exploring mutual benefits.

The high role of governance is shown in the study of Pratama and Nurmandi (2020) regarding the collaboration networks in dealing with the post-disaster eruption of Mount Merapi. The study explained that failure in the coordination process was caused by poor communication, misdirected and poorly executed leadership, inadequate coordination with stakeholders, as well as inadequate preparation among communities. However, the result showed that governance significantly affects the motivation that arises in the initial agreement, expands trust, and increases network reliability and expertise (Pratama & Nurmandi, 2020).

Leadership becomes important because it embraces, empowers, and involves, as well as move stakeholders to collaborate in the future. Subsequently, collaborative governance become a transformation driving force, serving and facilitating leadership style to promote and maintain the process rather than an agency acting in making decisions (Vangen and Huxham, 2003a; Crislip and Larson, 1994). The study of Kusumasari and Alam (2012) emphasized that coordinated leadership at all levels plays an important role in obtaining good results after a disaster occurs.

Conclusion

Collaborative governance in emergency mitigation is important because disaster has a very large and wide impact of damages in the community. Therefore, coordinated leadership is the collective effort of each stakeholder in recovering from a disaster. It is implemented in two main phases including pre-disaster and post-disaster. Meanwhile, the pre-disaster stage enables collaborative governance to form a community resilient by involving government and non-governmental agencies through a formal mechanism. In the post-disaster phase, it is performed through a community-based recovery process where every stakeholder is involved in the planning and decision-making to restore people's lives after the occurrence. This collaboration is carried out with assistance teams from various agencies and sectors that provide public services for the community.

However, weak coordination due to unclear roles and responsibilities between the actors involved, as well as leadership are some of the factors affecting the implementation of collaborative governance. Therefore, there is a need for clarity of rules, transparency of information, and facilitative leadership that connects and mobilizes agencies to jointly form a disaster-resilient community.

References

Agranoff, R. (2006). Inside collaborative networks: ten lessons for public managers. *Public Administration Review* volume 66(s1), p. 56–65

Agranoff, R. (2007). *Managing within networks: adding value to public organizations*. Georgetown University Press: Washington

Agranoff, R, McGuire M. (2003). *Collaborative public management: new strategies for local governments*. Georgetown University Press: Washington

Andriyawan. (2021). Hasil Kolaborasi, Rumah Zakat Terjun Beri Bantuan di 5 Titik Bencana. Retrieved from www.bisnis.com: https://bandung.bisnis.com/read/20210120/549/1345563/hasil-kolaborasi-rumah-zakat-terjun-beri-bantuan-di-5-titik-bencana

Alesch DJ, Arendt LA, Holly JN. (2009). *Managing for long-term community recovery in the aftermath of disaster*. PERI: Fairfax

Andrew, Simon, A., et.al. (2015). Grass-root organizations, intergovernmental collaboration, and emergency preparedness: an institutional collective action approach. *Local Government Studies* Vol. 41, No. 5, p. 673–694

Ansell, C., Gash, A. (2007). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory* vol. 18(4), p. 543–571

Bardach, E. (1998). *Getting agencies to work together: the practice and theory of managerial craftsmanship*. Brookings: Washington

Birkland, TA. (2007). *Lessons of disaster: policy change after catastrophic events*. Georgetown University Press: Washington

Bryson, JM., Crosby, BC., Stone, MM. (2006). The design and implementation of cross-sector collaborations: Propositions from the literature. *Public Administration Review* vol. 66(1), p. 44–55

Carter, W. Nick. (2008). *Disaster management: a disaster manager handbook*. Mandaluyong City, Phillipines: Asian Development Bank

Chrislip, David, Larson, Carl E. (1994). *Collaborative leadership: How citizens and civic leaders can make a difference*. San Francisco, CA: Jossey-Bass

Coppola, Damon P. (2007). *Introduction to international disaster management.* United Kingdom: Elsevier

Comfort, LK., Birkland, TA., Cigler, BA., & Nance, E. (2010). Retrospectives and prospective on Hurricane Katrina: five years and counting. *Public Administration Review* vol. 70(5), p. 669–678

Comfort, L. K., Boin, A., & Demchak, C. C. (Eds.). (2010). *Designing Resilience: Preparing for extreme events*. Pittsburgh, PA: University of Pittsburgh Press.

Derthick, M. (2007). Where federalism didn't fail. *Public Administration Review* vol. 67(s1), hlm.36–47

Dwirahmadi, Febi. (2016). Disaster risk reduction and climate change adaptation partnership through collaborative governance to build urban community resilience to flooding risks in Jakarta (disertation Doktor). Downloaded from http://hdl.handle.net/10072/367157.

Dyah, S. W., & Prasojo, E. (2020). Readiness Level of Collaborative Governance in Post-Earthquake Disaster Management: Case of Western Island of Java. *Advances in Social Science, Education and Humanities Research, Volume 464 Proceedings of the 1st Progress in Social Science, Humanities and Education Research Symposium* (pp. 1131-1136). Atlantis Press SARL.

Emerson, K., Nabatchi, T., Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory* vol. 22(1), p. 1–29

Hidayat, H. Y. (2020). Petabencana.id in Flood Disaster Management: An Innovation in Collabora-tive Governance-based Early Warning System in Indonesia. *JKAP (Jurnal Kebijakan dan Administrasi Publik), Vol. 24 (1)*, 61-78.

IOM (International Organisation for Migration). (2009). Disaster risk reduction, climate change adaption, and environmental migration, IOM, Geneva, Switzerland, p. 10.

Jha, A.K., Stanton-Geddes, Z. (2013). *Strong, safe, and resilient: a strategic policy guide for disaster risk management in East Asia and the Pacific, directions in development*. World Bank: Washington, DC.

Kusumasari, B., Quamrul, Alam. (2012). Bridging the gaps: the role of local government capability and the management of a natural disaster in Bantul, Indonesia. *Natural Hazards* vol 60, p. 761–779

Kusmiati, C.Y. 2005. Menuju perbaikan manajemen penanggulangan bencana di Indonesia. *Jurnal Administrasi Publik*, Vol. 4, No.2, hlm. 185-208

Kapucu, N. (2006). Interagency communication networks during emergencies: boundary spanners in multi-agency coordination. *The American Review of Public Administration* vol. 36(2), hlm.207–225

Kapucu, N. (2008). Collaborative emergency management: better community organizing, better public preparedness, and response. *Disasters* vol. 32(2), p. 239–262

Kapucu, N. (2009). Interorganizational coordination in complex environments of disasters: the evolution of intergovernmental disaster response systems. *Journal of Homeland Security Emergency Management* vol. 6(1), p. 1–26

Kapucu, N., Arslan, T., Demiroz, F. (2010a). Collaborative emergency management and national emergency management network. *Disaster Prevention & Management* vol. 19(4), p. 452–468

Kapucu, N. (2012a). Disaster resilience and adaptive capacity in Central Florida, US, and in Eastern Marmara Region, Turkey. *Journal of Comparative Policy Analysis*, vol. 14(3), p. 202–216

Kapucu, N. (2012b). *The network governance in response to acts of terrorism: comparative analyses*. Routledge: New York.

Kapucu, N., Ozerdem, A. (2013). *Managing emergencies and crises*. Jones & Bartlett: Boston

Kapucu, N., Hawkins, C., & Rivera, F. (2013). Emerging research in disaster resiliency and sustainability: Implications for policy and practice. dalam N. Kapucu, C. Hawkins, & F. I. Rivera (Eds.), *Disaster resiliency: Interdisciplinary perspectives* (p. 355–358). New York, NY: Routledge.

Kapucu, N. (2014). Collaborative governance and disaster recovery: the national disaster recovery framework (NDRF) in the U.S. Dalam Rajib, Shaw (ed). *Disaster recovery: used or misused development opportunity* (p. 41-59). Jepang: Springer.

Kapucu, N., Sadiq, Abdul-Akeem. (2016). Disaster policies and governance: promoting community resilience. *Politics and Governance* vol. 4 (4), p. 58-61

McEntire, D.A. (2006). *Disaster response and recovery: strategies and tactics for resilience*. Wiley: New York

Moynihan, D. (2005). *Leveraging collaborative networks in infrequent emergencies*. IBM Center for the Business of Government: Washington

NN. (2019) About disaster management. www.ifrc.org. accessed on March 21, 2019

Pratama, P. Y., & Nurmandi, A. (2020). Collaborating network in managing post the Mount Merapi's disruption, Indonesia. *Jamba - Journal of Disaster Risk Studies 12(1)*, a927.

Phillips, BD. (2009). *Disaster recovery*. CRC: Boca Roton.

Pribadi, Krishna S., Meranti, Gde Widyadnyana. (1996). *Mitigasi Bencana*. Bandung: ITB

Rahmayanti, K.P. (2020). Promote collaborative governance? Review of disaster risk reduction strategy in Jakarta. *The 5th International Conference on Climate Change 2020: IOP Conf. Series: Earth and Environmental Science.* IOP Publishing.

Riaman, Y. (2021, March 05). *Kolaborasi Kunci Sukses Pemulihan Bencana di NTB*. Retrieved from www.mediaindonesia.com: https://mediaindonesia.com/nusantara/388662/kolaborasi-kunci-sukses-pemulihan-bencana-di-ntb

Stoker, Gary. (1998). Governance as theory: five propositions. *International Social Science Journal* vol. 50(155), p. 17–28

Sunarharum, Tri Mulyani, Sloan, Mellini, & Susilawati, Connie. (2014). Community engagement for disaster resilience: flood risk management in Jakarta, Indonesia. Dalam Revez, A, Perera, S, Henriksen, H J, & Shklovski, I (Eds.) Proceedings of the Second ANDROID Residential Doctoral School, Work Package III. ANDROID Disaster Resilience Network, United Kingdom, p. 151-160.

Sunarharum, T. M, et.al. (2020). Collaborative Approach for Community Resilience to Natural Disaster: Perspectives on Flood Risk Management in Jakarta, Indonesia. Sustainability in Energy and Buildings 2020 (pp. 275-284). Singapore: Springer Nature.

Vangen, Siv, Huxham, Chris. (2003a). Enacting leadership for collaborative advantage: Dilemmas of ideology and pragmatism in the activities of partnership managers. *British Journal of Management,* vol 14, p. 61–76.

Walker, G., Tweed, F., & Whittle, R. (2014). A framework for profiling the characteristics of risk governance in natural hazard contexts. *Natural Hazards and Earth System Sciences*, vol. 14(1), p. 155-164.

Wallis, J., Gregory, R. (2009). Leadership, accountability and public value: resolving a problem in "new governance"?. *International Journal of Public Administration*, vol. 32(3), p. 250–273

Ward, R., Wamsley, G . (2007) From a painful past to an uncertain future. dalam Rubin CB (ed) *Emergency management: the American experience 1900-2005*. PERI: Fairfax, p. 207–242

Waugh, W.L., Streib, G. (2006) Collaboration and leadership for effective emergency management. Public Administration Review vol. 66(s1), p. 131–140