Institutional Effectiveness and Inclusions: Public Perceptions on Indonesia's Disaster Management Authorities

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Abstract─Disaster risk events always have impacts on disaster losses in terms of the sustainability. The phenomena of natural hazards continue to threaten the social and economic livelihoods of the community, ─ while policies and stipulated regulations for mitigating disaster risks reduction (DRR) endlessly become polemics both in national and local government institutions. The study was conducted to address public perceptions on the effectiveness of Indonesia's Disaster Management Authorities in managing DRR across the archipelago. Relying on the coproduction principle, the author conducted a case-study through in-depth interviews and literature studies to gain public insights, including related encountered situations ─ revealing perceptions on the track-records of the performance of disaster management authorities in a SWOT analysis. The results indicated that both national and local disaster management authorities respectively are less effective due to the lack of effective communication, coordination, collaboration, and synchronization in managing DRR. Moreover, the scarcity of existing potential leaderships for decision makings through vertical and horizontal negotiations, ─ and lack of persuasive approaches for communities' engagement at all risk cycles. The study highlighted the importance of reforming the status of national disaster management authority ─ thus, it is more powerful in functioning to command, monitor, and control the lower disaster risk institutions and be able to synergize implemented policies with other government institutions. The study also suggested increasing coproduction through public-private partnerships and philanthropies to upgrade innovations, education and training, also psychological healings as a recovery process for greater sustainable development.

Keywords— *institutional effectiveness, inclusions, disaster risk reduction*

INTRODUCTION

Disaster risk is one of the problems challenged by the community and is a part of the global concern for human sustainability. The term risk alone is a conflicting part of communities' livelihood as the accumulation of systemic failures resulting in disaster risks. Disasters risk then require concerns of proper management to deal with complexities, ambiguities, and uncertainties of disaster situations (Lin, 2018). Disaster risk management is primarily a systematic process of the administration of institutions by integrating operational skills and capacities, strategic policies, and coping capacities to improve the impacts of hazards and vulnerabilities for disaster risk reductions (UNISDR, 2009; Lin, 2018). These institutional integrations consist of publics, privates, and philanthropy organizations ─ taking responses on every single disaster risk by providing better strategic risk management as part of accountability for disaster risk reduction (DRR).

Institutional effectiveness is a complex and multifaceted construct applied across public organizations performing the quality of products or services, efficiency, adaptability and flexibility (DiPaola & Forsyth, 2011; Mott, 1972; Nolan, 2017). Institutional effectiveness critically perpetuates a determinant role in managing disaster risks for resilient communities. Yet, disaster risks might have threatened the quality of institutions and quality of governance as well. Likewise, disaster risks consequently deteriorate the quality of livings. As a concern, scholars claimed that managing disaster risks for sustainability is often too slow and do not fit the urgency of the

experienced vulnerable communities (Van der Leeuw et al., 2012; Brundiers, 2016). Institutional effectiveness, therefore, within democratic governance is truly demanding of its proper management for DRR. This can exist through the incorporation of public engagement on DRR efforts.

The United Nations' mission of Sendai Framework for Disaster Risks Reduction (DRR) 2015-2030 pioneered the relevant issues through the second priority for actions to strengthen disaster risk governance (Pearson and Pelling, 2015). Admittedly, disaster risk governance at all levels is vital to control and to manage disaster risks across sectoral and territorial boundaries. Thus, ensuring the coherence between national and local capacities, effective institutions to produce public disaster risk policies, regulations, and responsibilities are the main instruments; ─ to guide, engage and encourage public and private sectors and communities to address disaster risks.

Institutional effectiveness in both national and local levels is pivotal to minimize impacts of disaster risks and contingencies also to build public awareness of disaster resilience. National disaster risks institution takes roles and responsibilities of allocating equal services and resources among local operating organizations to manage DRR. Previous studies indicated that integrated risks and capability assessment at the national level of administration for disaster risk management as capabilities are critical and required to handle DRR (Lin, 2018). This integration is public inclusions that play a fundamental role to take part in DRR efforts. Inclusion by definition is an active process of integration as a feeling of belonging manifested to perceptions, fairness, respects, values, and actions (Deloitte, 2013; Sison, 2017).

Public institutional effectiveness primarily perpetuates several essential aspects stated by Sanders (2016) which aligned together; 1) *leadership*, plays the pivotal role to define and refine the process and execute visions in daily routines. Leaders translate visions and values into strategic and objective processes and practices in alignment with cultures for optimal DRR; 2) *communication*, everything exists because of the act of continuous conversations. Communication, including collaboration, is the pivotal driver since no individual stakeholder can see the entire disaster risks management problems, instead of having integration with others (Lin, 2018). Strategic communication ensures the consistency process to avoid miscommunications and shape performance culture. Because misleading communication can have disastrous effects on bureaucracy's responses to disaster risks crisis (Hatcher, 2020); 3) *accountability*, translations of vision, and strategic direction into proper and accountable management dealing with objectives, commitment, and actions. Management accountability system explained what is expected by vulnerable people with actual performance for improvement, renewal, and sustainability; 4) *Delivery*, the organization develops services that are internally efficient, locally responsive, and globally adaptable ─ measurable service.

Effective disaster management institutions can also be connected to how far the alignment of public initiatives to improve strategic management and services. Public inclusions for DRR prove that disaster risks management as a multi-stakeholder process, ─ and so active participants are more effective for DRR since the degree of participation is always a dynamic process (Van Asselt & Renn, 2011; Lin, 2018). Thus, public participation through collaboration, cooperation, and effective communication is beneficial to manage disaster risks to the effective implementation of DRR policies.

Indonesia, one of the most disaster-prone countries in Southeast Asia, frequently experiences natural hazards as well as man-made disaster risks. Considering both exposures and vulnerabilities the country manages disaster risks through both national and local disaster management institutions, ─ including those local capacities to take greater responsibility for certain kinds of encountered disasters. The corridor of Indonesia's disaster risk management was laid on constitution No. 24/2007 about disaster management. The government is very proactive at establishing a legal framework, institutions, and budgeting. It is followed by the stipulated presidential decree No 8/2008 about the establishment of the National Disaster Management Authority (*Badan National Penanggulangan Bencana* ─ BNPB, 2008).

BNPB is the primer institution perpetuating the mission of commanding, coordinating, and executing disaster risk cycles to the lower counterparts of those local disaster management authorities (*Badan Penanggulangan Bencana Daerah* ─ BPBDs) placed at both provincial and regencies or city levels. Structurally, BNPB is a non-ministerial level institution. BNPB complies with four deputies based on disaster risk cycles, i.e. deputy for prevention and preparedness, deputy for emergency response, deputy for rehabilitation and reconstruction, and deputy for logistics and equipment. It also has a disaster management steering committee and a disaster management executive committee.

BNPB provides regulations and policies for disaster risk management and emergency responses. This national disaster management institution also employed tasks to guide and monitor activities of managing disaster risk efforts, such as prevention, responses, rehabilitation, and reconstruction equally, ─ defining the standardized needs for disaster mitigation based on the stipulated regulation. BNPB is responsible for updating the information to the public about disaster management activities, reporting to the president regularly those mitigations activities at any time of emergencies, but also once a month in normal situations. It is also responsible for the national and international donation systems; It is accountable to the national budget for disaster mitigations; ─ and responsible for the composition of local disaster management authorities (BPBDs). Thus, BNPB's functions are primarily to stipulate, execute, and distribute policies to BPBDs in responsive, efficient, effective, and accountable ways for managing DRR.

As the concern to the performances in generating their functions, BNPB and BPBDs frequently receive public critics of their effectiveness and prospects of managing disaster risks in such a very disparate archipelago of Indonesia. Disaster risks of this country exist in uncertainties that lead the country into one of the very vulnerable states in Southeast Asia. Therefore, the credibility of disaster management authorities is being questioned, because they are primarily powerful instruments as agents for leading and managing DRR. The performance of these disaster management institutions is literally and primarily encompassing the effectiveness of leadership aspect, strategic communication, accountability, and responsiveness of service delivery for DRR to vulnerable communities.

The current study was conducted to receive more perspectives about the institutional capacities of disaster management authorities at the national and local levels in managing DRR for sustainable community development. The research particularly presented public perceptions and experiences towards the effectiveness of Indonesia's Disaster Management Authorities (BNPB and BPBDs). These institutions play pivotal roles and responsibilities for the management of disaster risks across the archipelago, ─ while also function as inclusive disaster risks

institutions to engage civic participation for DRR efforts. Therefore, considering the rationale, this research question directs the study: "What are public perceptions about the performance effectiveness of Indonesia's Disaster Management Authorities (BNPB and BPBDs) for managing disaster risks reduction?"

Sequentially from the entire introduction part, the research method is presented, in which a case study is applied to have public perceptions of the effectiveness and inclusion of Indonesia's Disaster Management Authorities. Through the collected data, a SWOT analysis is applied. Then the results are discussed including supporting previous studies of DRR and organizational effectiveness, public participation, and coproduction principle. Finally, conclusions and policy recommendations are also addressed for implementations and further studies.

DATA AND METHOD

This study applied a case study design to explore further knowledge and understanding dealing with public perceptions of the effectiveness of Indonesia's disaster management authorities as a unit of analysis. Case study method explained the phenomena of intensively overtime of its natural setting, is essential to describe the fundamental knowledge in social science (King et al., 1994; Bhattacherjee, 2012). The research utilized in-depth semi-structured interviews to the participants and literature studies used for collecting the data. Moreover, the SWOT analysis technique was conducted to analyze the study findings. During the data collection process, respondents were confirmed to express their perceptions concerning the encountered situations. Those perceptions are mainly related to leadership, communication, accountability, and service delivery of public participation.

The interview process is firstly generated through the snowball sampling technique due to the expertise of the respondents, ─ and this is particularly targeted to the experts and practitioners in a similar field of disaster management. Snowball sampling is a method for interrogating and sampling the social environment of one or several individuals through sociometric questions (Audemard, 2020). This method gathers information from the participants and their related partners due to their similar field of expertise (Coleman, 1958; Audemard, 2020). Snowball sampling can be adapted for the questionnaire surveys, observations, or (face-to-face) interviews in which the current research is used (Audemard, 2020). Secondly, there is also data collected from communities, purposively selected based on particular locations of vulnerable people experiencing certain types of disaster, like in Aceh, Jakarta, Jogjakarta, Sulawesi, NTT, etc. For the literature study, printed and online media about public opinions and comments are also selected for the current research (i.e. newspapers, Facebook, youtube, etc.). Therefore, there were 14 interviewees participated in this study ─ consist of scholars or experts from the academia in the field of disaster management (4). By having these expert participants, the researcher previously contacted and dealt with the first acknowledgeable participant and conducted the interview process. Afterwards, the first interviewee recommended the next respondents for the next interview process – this could lead to further participants. Furthermore, other participants were purposively selected without the snowball technique for enhancing the study, they are business entrepreneurs (2), educators (4), and communities at large (4) from disaster-prone areas who frequently encounter disaster risks situations.

The interview process to the participants generated through the whatsapp media, by voice or video call lasted approximately half an hour in their leisure time particularly on weekends. From the stated leading question: "What

are public perceptions about the performance effectiveness of Indonesia's Disaster Management Authorities (at National-Local levels) in managing DRR?" ─ Then, it is elaborated into several follow-up questions for handling the interview process to the respondents as follows: 1) I am wondering to know your perceptions (optimistic as well as pessimistic ideas) about the effectiveness of the role of disaster management authorities (BNPB and BPBDs) for DRR efforts; What do you think about their (BNPB and BPBDs) effectiveness from the perspectives of leadership, communication, and accountability? 2) What do you think of BNPB and BPBDs' efforts at engaging other institutions (public/ privates) and the community at large to participate at DRR efforts? And in what way (responsiveness for service delivery)? 3) Do you see any opportunities or shortcomings of these disaster risks institutions? And what do you think they should be to better progress? These are freestyle interviews to further clarify and ask for feed-backs during the interactive talks. The interviews were conducted in the Indonesian language, then the results were transcribed and translated into English.

The data collection process is organized to keep the relevant scope of the study, ─ and is handled based on the need of the entire research during the interview process. Interview participants impressed their points or ideas and realities about institutional performance as the core aspect of organizations. And this includes public participation that contributes to DRR through efforts on the disaster risk cycles ─ preparedness and prevention, responses, and recovery process. The public did express their expectations to strengthen the capacities of disaster management authorities at both national and local level institutions. Since they play a vital role in DRR, the result of the study focuses on aspects of effective leadership, strategic communication, accountability, and responsive service delivery of DRR.

DISCUSSION

SWOT: Indonesia's Disaster Management Authorities

Referring to the data compilation, participants reiterated pivotal information as to the strengths and opportunities of the performance of institutional effectiveness. However, they also perpetuated a lot of concerns as challenges examining aspects of the performance of Indonesia's Disaster Management Authorities both in National (BNPB) and Local levels (BPBDs). The depicted data tabulation of the participants' insights is categorized or thematically generated and integrated based on the four pivotal aspects i.e. leadership, communication, accountability, and responsiveness of service delivery. There are some similarities of participants' thoughts and perceptions, thus, they are integrated into the same part without repetitions, for instance, having a "strong commitment to consolidate and to coordinate," ─ it is categorized into the strength of the leadership aspect. However, there are also some novel ideas of the participants that are directly elaborated into the related aspects. The elaboration of the collected information is briefly depicted as follows:

Table 1. Performance of Indonesia's Disaster Management Authorities

Aspects	Strengths	Weaknesses	Opportunities	Threats
Leadership	• Head of BNPB as commander, coordinator and responsive leader of disaster risks • Strong commitment & willingness to consolidate and coordinate. • BNPB is under the president's control. • BNPB posits at ministerial level • BNPB has its own complete organizational structures.	• Lack of comprehensive plan for disaster management • Unclear designing SOP at managing disasters • Lack of BPBD personnel • Decision making tends to be centralistic on BNPB; whereas BPBDs are powerless. • Head of BNPB seemed hard or powerless to function the command across line ministries.	• BNPB has power to command, coordinate and execute disasters with interrelated sectors. • Both BNPB and BPBDs have responsive to react to disaster risks and emergencies. • Empower local leaders to improve capacities on disaster mitigation. • Influence resilient communities to participate in disaster risks reduction.	• Political hindrances to plan budgeting for disaster infrastructures/ tools. • Leaders are limited/ bounded to do coordination at a disparate nation with multi-cultures, ethnics and geographical segmented islands. • Each ministry viewed disasters only on their own not in comprehensive perspectives.
Communication	• Effective communication between local and central government for disaster mitigations. • Intense communication of BNPB and president asking DRR progress. • BNPB coordinate with BPBDs and stakeholders for DRR.	• Regulations and policies for disaster management and DRR is weak & uncommunicated (sectoral) to society. • Lack of coordination among institutions whether vertical and horizontal level at managing disaster risks reduction (DRR). • Lack of information resources about disaster risks to communities.	• Integration of disaster risks courses into school curriculum. • Involving NGO's at locals and central level • Connecting the unconnected/ remoter using IT • Consider local wisdom as assets for DRR, disaster plan and recovery.	• Fragmented geographical areas and diverse disaster typologies. • Challenge of local cultures/ traditions and local languages • Religious doctrine considering disaster risks. • Threats of hoax related to disasters risks and efforts for DRR.
Accountability	• BNPB and BPBDs are responsible for existing disaster risks. • Regular budget auditing to BNPB and BPBD • Strengthening financial transparency and accountability for disaster risks reduction.	• Execution of disaster risks mitigation still not maximum. • Lack of transparency of budgeting and reports for DRR management. • Lack of effective DRR information alarm, tsunami detector and maintenance systems. • Lack of cyber security, law and policy. • Lack of responsive leader because of unclear function between local and central.	• Annual disaster management evaluation at regional level. • Sharing and benchmarking program with other regions at managing disasters. • Strengthening BPBDs regulations to lead service accountability for DRR and management.	• Disasters are viewed on limited natural hazards only. • Non-inclusive growth increases social and political instability. • Corruption, collusion and nepotism. • Scarcity of local disaster contingency planning. • Characteristics of regions and society to put trusts on government.
Service Delivery	• Governments (disaster agencies) provide budgets & infrastructures. • NGO's and international donors participate responding disaster risks. • Empowering local capacities through disaster risks reduction trainings and public engagements for DRR.	• Social, political and cultural problems. • Lack of education and training post-disaster • Psychological healings are still neglected. • Lack of investment on disasters preparedness. • Lack of local budgets in responding disasters and infrastructures (early warning system). • Lack of BPBDs, local government, and business collaboration and communities for DRR containment.	• Government plans to increase budgets for disaster preparedness • Synchronizing service management systems among regions (BPBDs) through annual meetings. • Increase socialization about disaster mitigation to local capacities (BPBDs). • Necessary to reform structure of BPBDs.	• Hindrance of regulatory constrains among institutions at managing disasters. • Limited knowledge management of BPBDs at DRR efforts. • Poverty, limited education and household income problems. • Absence of public participation (NGOs) for DRR, disaster planning and recovery process.

Effective Leadership

Disaster management leadership plays a fundamental role in managing disaster risks in Indonesia. Regarding the strength addressed in this study, BNPB leadership takes responsibility as commander of the chief, coordinator, and responsive leader on policies and management processes for DRR efforts. BNPB leadership showed a strong commitment to developing consolidation and coordination with other levels of government and related stakeholders. The structure of BNPB is equivalent to the ministerial level that is directly under the president's control. It is a critical function for strategic leadership and management facing uncertainties of disaster risks across the archipelago. BNPB leadership posits critical roles to facilitate more effective and more systematic public services due to challenges threaten vulnerable society at times of disaster risks and efforts to build back better. So, the effectiveness of leadership moderates the effectiveness of disaster management institutions. Strategic leadership and effective institutions can be generated through investment in management skills and capacity buildings; ─ these are very determinant elements. As scholars argued that problems of responding disasters are primarily found on the strategic level of disaster management, ─ and so strategic leaders need to find out information, collect, analyze and disseminate issues of potential disasters (Boin and Lodge, 2016).

However, the leadership aspect of BNPB is found to experience weaknesses in its comprehensive risk management systems. It still lacked comprehensive plans at managing disaster risks. It is in case of unclear design of standard operating procedures (SOP) stipulated by BNPB and its delegations to policy executions at local BPBDs included local government and related parties, like the current procedure for health protocols of the pandemic. Then, regardless of limited personnel, the decision-making process tends to be centralistic on the BNPB

side, while BPBDs as the hub of disasters only function as waiters of disaster risks, ─ rather than being more active and responsive risk management planners and managers, ─ and thus they tend to be static and powerless in a very prone disaster risks communities of the archipelago. As also stated by Hatcher (2020), that lack of effective leadership during disaster risks crisis limits the nation's response to the problem, increase political polarization around encountered disasters to be solved. Studies also acknowledged that institutional capacities are dynamic across fragmented boundaries and geopolitical tensions. Some disaster risks institutions and leaders tend to return to the status quo as risk waiters as it existed before disasters, ─ whereas, others are critically benefiting the opportunity to act out and trigger reforms (Boin and Lodge, 2016). It becomes the symptom of failures and imbalances in managing disasters across regions. Communities can only be better resilient if they belong to legitimate disaster institutions that mean abilities to preserve and adapt essentials capacities (Selznick, 1957; Boin and Lodge, 2016). BNPB institution also seemed hard to execute the functions of command to those line ministers in terms of disaster risk management systems. And so, in this matter, scholars recommend that institutions need to reconcile political and administrative tensions between conservative and responsive tendencies (Boin and Lodge, 2016).

As an opportunity, BNPB plays critical roles to develop coordination with those BPBDs and other local government institutions included NGOs to act and react to disaster risks and emergencies. It also functions to empower BPBDs and local leaders to improve capacities on responding effects of disaster risk cycles. However, to find effective leadership for managing disaster risks are also frequently impeded by political interests. It is operationally also including polemics when planning for infrastructure budgeting and development for resilience. Boin and Lodge (2016) argued that disaster management institutions through political and administrative systems might be hindered by uncertain threats and effects as trans-boundary crises. Hatcher (2020) then argued that a leader's role in communication failures harms the ability of bureaucracy to address disaster risks such as the COVID-19 pandemic ─ several local governments have risen to respond to the crisis in their areas on their own. Disaster management institutions often encounter those dynamic conditions as obstacles to overcome. Ministerial levels still do not consider disaster risk situations in comprehensive and causal perspectives. It is not a rule of thumb to develop coordination across ministerial levels, local governments, and society with multiple structures in bureaucracy, multiple-culture of organizations, and diverse culture of communities and ethnicities across geographical characteristics in such an archipelagic state.

Strategic Communication

Effective disaster management institutions depend on how information is communicated across levels of government to the management process for DRR. Transparency in communication is a key principle during disaster risks crisis (O' Malley et.al., 2009; Hatcher, 2020). BNPB is found to develop communication and coordination with local BPBDs and other local governments in line with disaster risk management. Likewise, BNPB actively generates the tasks of intense reports about disaster mitigation progress regularly and responsively to the president. However, in contrast, stipulated regulations and policies for disaster risks management of the country are considered weak because of the limited scopes on particular sectors ─ and lack of socialization to the communities about those disaster risks cycles, i.e. for disaster preparedness and prevention as well as response and recovery process, who are most vulnerable. The obstacle is the scarcity of reliable information resources to ensure public trust for risk reductions and adaptive capacities. There is a need for coordination among different

levels of institutions and trans-boundary organizations i.e. public-private to reduce the burden of the capacities of the national government in disaster risk management (Lin, 2018) and for the effectiveness of DRR efforts.

The efforts of disaster management institutions as an opportunity for solving disaster risk problems can be strengthened through evidence base and collective decision-making. It is practically through effective communication, integrating, and facilitating stakeholders together in a respective manner (Van Asselt and Renn, 2011; Lin, 2018). Effective communication by satisfying communities' information needs can also reduce the degree of information asymmetry and improve coproduction (Li, 2020). Thus, responding to the knowledge and information scarcities about disaster risks, a great opportunity is BNPB and BPBDs through the involvement of NGOs contribute to providing available resources like the use of technological tools to link and match information to the communities. The government also designed policy plans in case of disaster risk education as preparedness and prevention aspects that are integrated into the national school curriculum. As likely the previous study has found if young generations have strong desires to learn of how to stay safe and efforts for DRR in their surroundings to become better prepared (Amri et al., 2017), ─ however the study still found limited knowledge of children on DRR. Therefore, the role of disaster management institutions is pivotal in collaboration with other institutions and communities to also integrate local wisdom to contribute to disaster plans and recovery processes to better DRR.

The challenge to strategic communication of disaster management institutions is in some respects influenced by conditions of fragmented geographical areas and disaster typologies through exposures as well as disaster vulnerabilities. Regardless of local cultures and traditions, local dialects also become a hindrance to disseminate knowledge and information sharing of DRR to vulnerable people. Besides that, beliefs, rituals, and religious faiths seem to have crystallized in indigenous people's values to well-prepared for contingencies. Those are also crucial points to be considered. The empirical fact is from the experience of the COVID-19 pandemic. Societies are very diverse reactions towards how to respond to the pandemic outbreak. Likely, to the United States case, for instance, the failure in addressing the pandemic is not the failure of bureaucracy, but rather failures of communication particularly of the leader (Hatcher, 2020) to the vulnerable communities. This causes the lack of public trusts to the government or disaster risks institutions about the implemented policies of protocol system, ─ because communities are bounded by more supernatural on their faiths, beliefs, and rituals, which are not scientific and rational. This is what we called as problems of people bounded rationality towards disaster risks.

Considering effective communication, however, the trend of information biases such as the spread of fake news as hoaxes in social media has frequently affected communities to reluctance, ─ but also to anxieties at responding to disaster risk events. The previous study also found that societies' problems might be in demographic, geographic, and cultural conditions, and circumstances included their consequences (Boin and Lodge, 2016), ─ and so institutions are challenged to innovate out of routines and practices through new adaptive capacities and improvisations. Having institutional and regulatory reform, education, and regular training of disaster risks to empowering society are effectively demanding.

Disaster Risk Accountability

Accountability and performance management systems underpin information flows and interaction between levels of government institutions (Boin and Lodge, 2016) for the DRR and recovery process. Accountability and information transparency could change the image of society to engage more on DRR. BNPB and BPBDs seemed proactive at disaster responses involving corporate sectors for the existing natural hazards as well as man-made disasters. As a reality, government and international donors have actively contributed to disaster events through both financial supports, charity programs, and other social programs. And so, transparency and accountability system are pretty much crucial for the organizational effectiveness, such as regular budget auditing conducted to both BNPB and BPBDs and related institutions.

Instead, program implementation for DRR is still found weak due to the lack of transparency of public services particularly at times of disasters and reports system to the donors as well as transparent systems to the public. As Hatcher (2020) argued that lack of transparency of communication from the nation's highest office restricted the ability of bureaucracy at all levels to respond to the disaster risks crisis. For instance, tools for disaster preparedness and preventions are still lacking, i.e. tsunami detectors included the maintenance systems and the scarcity of cybersecurity. And so, law enforcement and policy process at managing disasters also ask for revisions. Moreover, it was found that there still a lack of responsive leaders for DRR efforts in local areas because of unclear functions and overlapping tasks for managing disaster risks. And thus, it causes the lack of responsible and attentive communities on DRR efforts, ─ vulnerable communities are less likely to respond and disregard emergency messages, even though they are well-informed (Hub and Saturday, 2018).

The very progressive thing is that BNPB develops policies and program evaluations annually at regional levels nationwide. The annual meeting, sharing, and benchmarking programs among regions to managing DRR are intensively developed. Effective disaster management institutions could develop national risk assessment to contribute and understand potential risks faced by the state and simultaneously seeking for developing capacities of disaster cycles at all levels (Boin and Lodge, 2016). To develop DRR programs, the government keeps strengthening regulations and its accountability at BPBD levels, with the hope could improve public trust in the government. Fukuyama (2020) argued that trust in governments relied on societies' belief in public professional expertise, technical knowledge and accountability, and confidence in their leaders.

Challenges faced by disaster risks institutions and public inclusions can be viewed from the accountable perspectives of behavioral public administration that commonly people perceive disasters on bounded rational thoughts that are limited to natural or biological hazards only. Nevertheless, disaster vulnerabilities are crucially influential cases of socioeconomic and cultural values to be taken into account. Non-inclusive communities on DRR efforts, in this case, have widened the gap of social integrations and partisanships causing instabilities. Pros and cons might exist in managing disaster risks. For instance, issues of corruption, radicalism, and terrorism become huge obstacles to build back better and obtain greater sustainable development. Another hindrance found is the scarcity of BPBDs capacities within collaborative governance to focus on disaster contingency planning, i.e. disaster preparedness and recovery plans. Effective and accountable institutions should strengthen resources and rebuild networks across regions to tackle disaster risks of a resilient community (Boin and Lodge, 2016). This asks to consider the characteristics of the community for particular treatments.

Service Delivery on Disaster Risks Reduction

Public service is the main target of the operational aspect of DRR to vulnerable communities. The government posits dominant functions to provide resources and services through budgets and infrastructures for managing disaster risks nationwide. Then, stakeholders' integrations like NGOs and international donors participate in responding to sorts of disaster events. NGOs also play pivotal roles in all aspects and levels of DRR for society's progressive development (Lassa, 2018). These all are integrated components through collaboration to empower resilient communities to better progress and sustainable. Similarly, scholars argue that one way to increase credibility and trustworthiness depends on credible intermediaries, — local community leaders, professional experts, non-profit organizations, and interrelated groups in a co-productive manner (Tsai et al., 2020; Li, 2020).

Yet, DRR programs are often found weak at the implementation in terms of social characteristics, political and cultural problems. BNPB has been providing training nationwide, but BPBDs and other local levels often fail to implement disaster risk policies like the aspect of inefficient prepared-plan properly. Thus, communities are lack knowledge and less motivated to participate in the training of disaster risk preparedness. Along with that, traumatized people are lack of psychological healing that is often neglected by disaster risks institutions. Lin (2018) witnesses the Swedish disaster risk management system as a practical view of three administrative levels, local, regional, and national; that is based on the principles of responsibility, parity, and proximity. The administration system, in this case, authorities need to be more responsible in public services and function in those conditions through the effectiveness of capacities in managing disaster risks at the lowest administrative level. To the current context, the scarcity of resources still exists for investment in disaster risk cycles, such as for preventions and recovery process — settings of national budgets for disaster risks management and infrastructure provisions are still not sufficient. Those are because of the lack of synchronization among disaster management institutions, other government institutions, and corporate sectors for disaster resource provisions.

Considering budget deficits, the government keeps developing strategic plans and concessions to increase budgets for disaster risk management of the annual national budgeting. Another chance is BNPB continuously makes efforts to synchronize disaster service management systems across regions (BPBDs) around the archipelago. It is to develop the progress among public-private partnerships and to develop synergy with local stakeholders, — most importantly civic participation on DRR. Through public socialization of DRR efforts, it would give more chances to the progress of capacity development and build back better. Effective community participation is the foundation of decision-making for sustainable social development. Community participation for DRR and recovery process initiated by the government as well as private organizations (NGOs), even local initiators would contribute to gain proper fulfillment (Pyles et al., 2018).

Sadly, regulatory systems in Indonesia are still overlapping in managing disaster risks. Regulatory turbulence creates difficulties for disaster policy innovations to reach a better resilient society. It is because of limited knowledge transfer to deal with regulations and disaster policies at lower levels of disaster risk institutions. These situations create obstacles to societies' participation and efforts to tackle down vulnerable communities living under uncertainties. In other words, the absence of synchronized proper regulations and policies affects the community's inclusion for DRR. Regardless of the current COVID-19 pandemic, take tourism as another example, Indonesia is good at tourism promotions and development, but the country lacked investment in safety to make

activities relatively safe for both domestic and foreign tourists. It seems nobody has as much practice at responding to disaster risks in Indonesia. And therefore, government omnibus-law might be a possible strategic output for better management and DRR.

CONCLUSION

The effectiveness of disaster management institutions truly depends on having the effective leadership. Societies want leaders to strengthen effective institutions and develop effective policies through evidence-based, instead of prejudices, ideologies, and bounded rationalities (Yang, 2020). Regarding its geographical location at the pacific ring of fire, Indonesia is prone to natural hazards causing vulnerabilities; regardless of biological hazards such as the current global COVID-19 pandemic, etc., and man-made disasters; ─ but comprehensive plan and action to deal with disaster risks are still lacking. It can be argued that leaderships are under crises and still encounter problems to envision strategic management to tackle DRR. Even though the BNPB is under the direct president's commands and control, it still lacked comprehensive plans addressed in the standard operating procedure (SOP). It is because of the unclear division of tasks and functions, even across ministries toward lower BPBDs. We can observe from the current risks management system of the COVID-19 pandemic. It seems there have been overlapping tasks among BNPB, Ministry of Health, and other ministries, including military institutions. And so BNPB is lagging its powerful function as a very prominent disaster risk management institution in the country.

Both BNPB and BPBDs are lack of strategic approaches to synchronize DRR programs within and across levels of institutions. BPBDs more often function just as program executors, and this is what leaderships are too often misleading to the management for DRR. It is much related to rational effective decision making. Bounded rationality and willpower to the decision-making process are ineffective because of the influences of internalities and externalities (Mullainathan and Thaler, 2000). Since the status and structure of BNPB have not reformed to become a coordinating ministerial level, it would always be in hardships to execute its functions like command, coordination, and implementation of disaster risk management policies. It is likely that managing disaster risks are segmented to each ministerial task and not in comprehensive and integrated responsibility. BNPB's coordination to BPBDs and other local governments is likely inattentive because locals consider it as not fully as their portions and responsibilities to DRR, ─ while disasters and calamities continuously hit vulnerable communities. That is why BPBDs are critically weak and powerless at managing disaster risks at local levels of governance. Institutional effectiveness determines successful DRR efforts. Even it is not only on risk reduction but also in disaster recovery and resilience depend on the capacity of effective institutions and systems to responsively function over encountered crises (Boin and Lodge, 2016). Thus, capacity buildings are necessary for sustainable resilient communities.

For the communication aspect, the strategic policy of BNPB encountered turbulences to some other system of governance, ─ and therefore, the institution tends to experience weaknesses in implementing DRR programs. Whereas BPBDs are likely to function as disaster responders at times of disasters or crises, ─ there is an absence of intensive management innovations on those other disaster risk cycles, i.e. preparedness, prevention, and even recovery plans for contingency situations. Now even disaster risk management has shifted from responses to preventions and future preparedness (Lin, 2018) through a disaster recovery plan. It indicates the lack of

communication, coordination, and collaborations among disaster management institutions and across ministerial levels and local governments to managing disaster risks in the archipelago.

Leaderships and communication are crucial aspects of DRR efforts. Government and Disaster Management Authorities are not everything. Public inclusions are the proper solutions to overcome possible disaster risks. Strategic communication can increase public participation and engagement on DRR; while it also minimizes hoax of uncertainties and potential disaster risks; ─ increasing information credibility to reduce information asymmetry, increasing public trust, and motivating societies to comply with disaster risk policies and coproducing better outcomes (Li, 2020).

Public administration needs to boost disaster management institutional reforms focusing more on bureaucracy, emphasizing the importance of transparency, compassion, empathy, and evidence (Meier, 1997; Hatcher, 2020). Effective collaboration and cooperation are relevant for transparency and accountability through evidence-based approaches of infrastructure provisions and financial systems to managing disaster risks. Fiscal constraints required the government to redesign budget policy on DRR through cost-effective analysis, ─ involving private sectors to contribute as well even to the recovery plan. One dollar spent on future prevention is more effective than four dollars consumed at responding disasters. Indigenous people tend to be risk-takers than risk-managers. Vulnerable populations tend to become the least prepared for exposures and vulnerabilities (Hub and Saturday, 2018). They are on the situation of potential disaster risks, ─ with the inability to anticipate and to keep up for recovery from consequences of disaster impacts. Increasing information credibility is pivotal through nudging individuals to voluntarily coproduce (Li, 2020). And thus, knowledge and training through education about disaster risks are pivotal. Then technically, a need to develop single-window services of updated valid and reliable emergency news, ─ and available infrastructure tools like early warning systems should be a priority than just distributing aids once a disaster devastated vulnerable communities.

Government and corporate institutions need to rethink evidence-based management in crises (Yang, 2020). The perspectives on public service provisions and delivery of disaster management institutions are still limited to the disaster responses ─ whereas lacking to fund other disaster risk cycles that require more serious attention. It can be seen from the amount of national budget proportion provided for disaster management. For example, in 2019 was allocated 610 billion rupiahs, less than the 2018 budget 700 billion rupiahs from the total 4.4 trillion rupiahs of the national budget. Then preparing for future disaster risks and recovery plans is still limited, ─ it is admitted that major issues of responsibility for DRR in local areas lie with local authorities ─ not with the national government. Therefore, the effectiveness of institutional reform and public inclusions are fundamental in this study, included synchronous omnibus low and policy innovations for managing DRR in Indonesia.

DRR management, therefore, is laid on the coproduction principle in public administration. It is an umbrella principle that captures a wide variety of activities within any phase of public service cycles including disaster risks management, ─ in which public actors and society hand in hand work together to coproduce benefits (Nabatchi et al., 2017) through effective institutions and public inclusions for DRR. The effectiveness of coproduction and public service provision primarily depends on 'trust' (Fledderus et al., 2014; Fukuyama, 1996, 2020, Li, 2020).

RECOMMENDATIONS

The Indonesian government needs to consider in revisiting their disaster risk management system which applied in the country. The capacities of BNPB and BPBDs are crucial to be reformed and transformed. If necessary, the status of BNPB can be reformed to be a coordinating ministry, to have more power on commanding, coordinating, and controlling the system across ministerial levels and lower levels of government for managing disaster risks even at times of crises, ─ this is to avoid overlapping functions. Then the regulatory system and policy practices of disaster risk management should be strengthened and synchronized to match the typology of disaster risks and the characteristics of the society regarding diversities in Indonesia.

Potential leadership for managing disaster risks is an ultimate point required to enhance the capacities, develop communication, coordination, and collaboration across levels of institutions for proper disaster management and DRR. Local government should take disaster risk management as their local priority programs for sustainable development. Regardless of empowering local capacities of disaster risks management personnel, budgeting systems are pivotal to be increased for managing disaster risks through available infrastructure provisions and investment, ─ while regular training and recovery process is regularly developed to communities.

Through the proposed coproduction theory, ─ integration of two main actors as service producers are pivotal in the public sector i.e. government and citizens (Nabatchi, et al. 2017); ─ more public inclusions and participation, disaster risk education, NGOs engagements, and societies for DRR are critically demanding for future studies. Disaster risks innovations and technological enhancement also need to be developed across regions, and collaborative research bases and practices across dimensions at all sectors of governance need to be established. Finally, DRR and disaster recovery plans can only be successful if they are founded in effective institutions encompassing effective leadership, communication, accountability, inclusive, and responsive service delivery within comprehensive systems to manage DRR for better sustainable development.

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