

Metagovernance on Disaster: Learning from Lampung Tsunami in Indonesia

Ari Darmastuti¹, Feni Rosalia²
{aridarmastuti@yahoo.com¹, feni_rosalia@yahoo.com²}

Faculty of Social and Political Sciences, University of Lampung, Indonesia¹²

Abstract. This study intends to explore the way organizations from state, professional, and community work together in disaster countermeasures on Lampung Tsunami, Indonesia in 2018 in three stages disaster countermeasures: mitigation, emergency response, and recovery/rehabilitation. Interviews, three observations, twice focussed group discussions, and documentations were the sources of the data collected between December 2018 up to July 2019. Research result shows: (1) disaster stakeholders developed *multi-stakeholders partnerships (MSP) metagovernance* marked by written Memorandum Of Understandings (MOUs) among stakeholders of disaster with Badan Nasional Penanggulangan Bencana (BNPB) yet these MOUs were not used as the basis for further development of integrated approach, standard operating procedures, as well as field operation mechanism and deployment of resources : (2) there were Non Government Organizations (NGOs) performing all functions of disaster countermeasures while others mostly performed only on preparation and response stage to disaster.

Keywords: metagovernance, disaster countermeasures, Lampung tsunami; memorandum of understandings

1 Introduction

As a country that sits on ‘the ring of fires’, Indonesia has been facing many forms of disaster at many scales of danger. Data provided by BNPB (2019) of the Republic of Indonesia shows the varieties of disaster of massive scale in Indonesia between 2018 and 2019. According to the Board, the incidents are as follows: floods (866), flash floods with landslides (2), landslides (639), tidal waves and abrasions (37), forest fires (396), earthquakes (33), earthquakes with tsunamis (2), tsunamis (2), thunderstorms (1.135), mountain explosions (53), draughts (129).

Among those incidents of disaster, Lampung tsunami on 22 December 2018 (together with Banten area tsunami) was among the most recent major disaster. According to BNPB (<http://national.tempo.co.id>, 3 January 2019) casualties in both areas were 429 dead, 1.459 wounded, 10 people lost, 36.923 people temporarily became internally displaced and around 10.000 were permanently homeless due to lost of property from the tsunami. Although there were not any exact data on lost of properties due to that tsunami, an estimation shows that the types of lost and damage were houses, hotels and restaurants, schools, health centres, stores, ships, cars, motorcycles, shelters, ports, ship-docks. Although the lost due to this tsunami was not as big as the previous earthquake in Lombok and earthquake with tsunami in Central

Sulawesi, the tsunami created massive loss of life and properties as well as trauma for the victims and their families.

How did, then, the government and community deal with that disaster? Should the government be working alone since they are the most responsible institution for the welfare of the people, especially victims of disasters? Observations on the following days of the disaster in South Lampung, Indonesia (25 December 2018) showed that there were many actors involving in the disaster countermeasures, especially at, and the stage of emergency response following the tsunami. Those actors were government institutions (army and police, health officials, Local Disaster Countermeasures Board, Indonesian Red Cross or *Palang Merah Indonesia (PMI)*, Local Office of Social Affairs, Regency hospital, community health centers, office of public works, etc); NGOs and community based organizations (CBOs) (Muhammadiyah Disaster Management Centers (MDMC), Nahdlatul Ulama, Local Catholic community, Komunitas Mutiara Lampung Selatan/Komil, Kagama/Gadjah Mada Alumni Association Care); professional organizations such as Indonesian doctor association, and association of psychologists.

The activities of those actors were also different. Victims evacuation and treatment were primary activities in the first, second and third day of the tsunami. Furthermore, these activities were conducted mostly by redcross, local disaster countermeasures board, army and police, and doctors. Debris clearance, provision of food, clothing, and temporary shelters were the dominant activities together with those two previous ones. These activities were conducted by more varied organizations, from government institutions to NGOs, CBOs, community members, groups of politicians from some political parties, etc. Trauma healing became important activity from the third day from the tsunami aftermath; and it was conducted mostly by professional organizations, especially related to psychological works.

How did these organizations which alien to each other manage to work together in quite timely with quite good fieldwork without causing too much conflicts for the critical period especially in disaster response? More specifically, how did these different organizations and institutions with different work cultures and different governances manage to develop 'certain agreed governance' to distribute response and responsibilities? How does science tell us the way in which a lot of organizations with different backgrounds, interests, expertises, skills, regulations, work cultures may work together? If they do work together, in what way?

Theory on disaster management tells us that disaster is usually assessed in three stages, namely:

- (i) mitigation, which is divided into two stages; (a) prevention, or the timely recognition and early warning of emerging threat patterns, and the ability to intervene effectively to nip crises in the bud; and (b) preparation, or the capacity to prepare for the unknown, to put plans in place, and update those plans based on practice and discussion
- (ii) Reaction: the response stage of crisis management, requiring critical decisions and getting them implemented; and
- (iii) recovery is learning lessons from crises, maintaining accountability, and restoring legitimacy to weakened government institutions.

A quick assessment on the literatures of disaster revealed that most the articles discussed the matter from some lenses of social sciences such as interpretation of disaster risk and the responses or actions [1]; impact of disasters [2], social vulnerability [3]; social vulnerability [3]; indigenous knowledge [4]; children's coping strategy following disaster [5]. Other discussed from physical aspects such as architectural and structural designs for the purpose of earthquake disaster management [6]; coastal protection damage [7]; and impact of earthquake [2].

In the study of government and governance, the phenomena of different organizations from different types or organizations with different backgrounds, interests, expertises, skills, regulations, work cultures can be explained through a rarely studied phenomena, metagovernance. According to La Cour and Andesen [8], metagovernance means how a state governs interactive governance from a distance in order to position the various stakeholders into a specific governable terrain. Stark [9], on the other hand, said that metagovernance is self-governing, networks and hybrid arrangements, coordination and steering of governance institutions and processes. He continued that meta-governance may be exercised by any resourceful actors, public or private through regional policy and governance and the increasingly complex governance tasks that resource companies have taken through their participations in an expanded scope of social policy issues.

The metagovernance may appear on two schemes, network governance [9] or multi-stakeholders partnership (MSPs). *Network governance* is government of governance, vital but difficult and contentious governance or network and hybrid arrangements [10]; the organization of self-organization, the regulation of self-regulation, the steering of self-steering, the structuring of the game-like interaction within governance networks, and interaction among actors to influence parameter changes to the overall system [11]. In this regard, metagovernance in the type of network governance pre-requisites a very strong new type of agreed governance. *Multi-stakeholders partnership*, on the other hand, is a type of metagovernance which links different types of governance, private or public. It means, institutions are mostly directed by their own rules and regulations when entering the partnership and do not surrender their basic principles or rules in doing so. Moreover, a scheme of metagovernance could be succeed due to three factors: an inclusive process, a locally adapted design of the standard, and institutionalized compliance management [12].

2 Methodology

This study applies the concept of metagovernance by concentrating on two research questions: (1) how each organization or institution involved in countermeasuring the Lampung tsunami disaster at the end of 2018 and early 2019 perform it's own rule and governance in the field of disaster countermeasure; (2) what kind of metagovernance has appeared from the fieldworks of many organizations/institutions that involved in the tsunami disaster countermeasures and how it works.

Data were collected using interviews, observations, documents, and informal focussed group discussions (FGDs) from December 2018 through March 2019 and extended to July 2019 for additional information. Informen in interviews came from several organizations and institutions: MDMC, South Lampung Government Officers, Penengahan and Rajabasa Sub-District Disaster Task Forces; members of psychological associations, member of Indonesian Doctor Association, Local NGO resource persons, Gajah Mada University students, and volunteers in shelters

Observations were conducted four times in several areas: (1) on 23 December 2018 in Lampung Province Government Office Reffugee center; (2) on 25 December 2018 in Rajabasa Sub-district refugee center; in the tsunami affected areas along South Lampung coastal areas; in Kalianda indoor tennis hall refugee center in South Lampung; (3) on 2 January 2019 in Bakauheni Sub-district refugee center, in South Lampung Regency Hospital "Bob Bazar", in Rajabasa Sub-district refugee center; in Kalianda indoor tennis hall refuge

center; and in tsunami affected coastal zones; (4) on 2 February 2019 in two villages in Rajabasa Sub-district and tsunami affected coastal zone in this sub-district.

Informal focussed group discussions were conducted four times in different locations: (1) with red-cross local officers, volunteers from one university alumni association, and village government officers on December 25 in Rajabasa refugee center; (2) with university student volunteers, refugees, and village officers in Bakauheni refuge center on 2 January 2019; (3) with various resource persons from different offices of South Lampung Government on 2 February 2019 in South Lampung Government office; and (4) with volunteers of Gadjah Mada University students in their basecamp in the Subdistrict of Rajabasa on 2 February 2019. Data from documents were collected from institutional regulations of government institutions, as well as regulations from NGOs and professional organizations. Reports and news related to the incident of South Lampung tsunami in media were also used in this study.

3 Result and Discussion

3.1 Governance of the Government Institutions in Contermeasuring Tsunami Disaster

There are many government institutions which mandates are related directly or indirectly with disaster, including tsunami. The most important one is BNPB. According its statute, BNPB functions as the coordinator of all stakeholders in disaster countermeasures whether before, at the disaster, and after the disaster (Law number 24/ 2007 regarding BNPB); or prevention, preparation, response and recovery to disasters. BNPB also decides the statues of any disaster, whether it is national, provincial, or local (interview with a member of the BNPB, 23 January 2019). As coordinator of all activities regarding to disaster countermeasures, BNPB is equipped with funds, manpower, logistics, warehouses and a Quick Response Unit to Disaster. Members of BNPB come from mainly two backgrounds, government officers from related offices and community leaders nominated and selected by a Committee of the House of Representatives (Source: interview, 23 January 2019). On the provincial and local levels, there are Provincial Board for Disaster Countermeasures and Regency and City Board for Disaster Countermeasures.

Other than BNPB, there is also National Board for Search and Rescue or *Badan Search dan Rescue Nasional* (BASARNAS) which is established based on Law number 29/2014 regarding Search and Rescue. As in the name, the main activity of BASARNAS is for searching and resquing victims of disasters; or main activity is responding to disaster. However, to be able to perform its response activity, BASARNAS also has main functions on preparation, especially in preparing its human resources knowldege and skills through trainings, seminar, workshops etc. To perform its duties, BASARNAS was supported with 1747 personnels of rescuer and 1545 back-up rescuers and has developed Standard Operating Procedures [13].

The following main institution on disaster countermeasures in Indonesia is Indonesia Red Cross or *Palang Merah Indonesia*/PMI [13]. Other than its main duty on the management of blood donors (as stated in Government Regulation nomor 7/2011), PMI also performs functions on disaster countermeasures, as well as social and health functions. The functions on disaster countermeasures are on preparation, response and recovery stages. Preparation includes human resources and equipments as well as supplies. Response includes provision of

basic needs supplies, and recovery includes counselling, data provision for further evaluation for future needs.

Other stakeholders on disaster countermeasures from government institutions are [13]: (1) Board on Meteorology, Climatology, and Geophysics or *Badan Meteorologi, Klimatologi dan Geofisika/BMKG* with the main mandate for development and implementation of disaster early warning system from some causes, for instance extreme weather, climate change, air quality, earthquake, and tsunami; (2) Center for Volcanology and Geological Disaster Mitigation or *Pusat Vulkanologi dan Mitigasi Bencana Geologi/PV MBG* with main mandate to develop policies, standardization, technical counselling and evaluation on volcanology and geological disaster mitigation which mean the main mandate is more on prevention and preparation than on response and recovery of disaster with more specifically on preparation of technical policies, norms, standards, procedures, criteria, plans, reports, mapping, and technical recommendations for disaster mitigation as well as researches, investigations, engineering, modelling, and information for public related to earthquake and tsunami; (3) National Institute of Aeronautics and Space or *Lembaga Penerbangan dan Antariksa Nasional/LAPAN* which has available resources on remote-sensing technology and data, aerospace facilities, satellite data based disaster early warning information system; (4) Transportation Ministry or *Kementerian Perhubungan/Kemenuh* with main mandate on development disaster-proof transportation facilities as well as recovery of road, bridges and other facilities and recovering connectivity as response to disaster; (5) Ministry of Marine and Fishery or *Kementerian Kelautan dan Perikanan* with its main duties on information distribution for fishermen related to disaster, extreme climate and weather as well as marine infrastructure mobilization on disaster; (6) Ministry of Environment and Forestry or *Kementerian Lingkungan dan Kehutanan* for policy making and implementation with regards to disaster, especially related to forest and natural; (8) Ministry of Public Works and Housing or *Kementerian Pekerjaan Umum dan Prasarana Wilayah* for development of policies and provision of facilities in the phase of disaster recovery; (9) Ministry of Social Affairs or *Kementerian Sosial* for development of policies for disaster mitigation and preparedness as well as disaster response, recovery and empowerment of victims ; (10) Ministry of Health or *Kementerian Kesehatan* for development of technical policies and implementation of health crisis response to disaster; (11) Police and Military to support other institutions in all disaster stages (prevention, preparation, response and recovery) through the development of Quick Response Unit within respective institution.

The data on government institutions show that there are institutions which perform all disaster countermeasure activities (from prevention, preparation, response up to recovery). There are also institutions which only function on prevention, or preparation and response, but there are institutions involve more in response and recovery. Their system of governance on disaster countermeasures among government institutions is quasi network metagovernance in which there are many memorandum of understandings between each institution with BNPB [13]; however each institution is mostly bounded by its own regulation and standard operating procedures [13] which make coordination is sometimes problematic (FGDs, interviews, and observations between December 2018-February 2019). Resource person from BNPB stated that the Board has tried to develop as good disaster countermeasures as possible, however, institutional barriers still exist. She added that although according to the law, her institution is the most responsible one for disaster countermeasure, however, her institution is not only limited in capacity and resource, but also have to deal with other institutions which are much bigger with huge roles and functions. Thus, to reach a common understanding on disaster, how

to develop common platform on mitigating or preparing, respond as well as recover from disaster are still long way to go. (Interview, 23 January 2019).

3.2 Governance of the Professional Groups in Countermeasuring Tsunami Disaster

This part will present result and analysis for the governance of two professional groups working for the South Lampung tsunami disaster countermeasure: the first is Indonesian Doctors Association or *Ikatan Dokter Indonesia* (IDI) chapter Lampung; and the second one is Indonesian Psychology Association or *Himpunan Psikologi Indonesia* (HIMPSI) chapter Lampung as well. The first part will present the governance of the IDI.

On the first day of the tsunami aftermath, or 23 December 2018, some doctors from the neighbouring regencies and cities of South Lampung, such as from Tanggamus Regency, Bandar Lampung City, Central Lampung Regency, and Metro City had arrived and offered help for the victims of the tsunami. Their priority was to save the life and treated victims with severe wound (source: interview, 25 December 2019). Informality of the IDI's conduct in *reaction* to the disaster and in deploying its members in *responding* to the tsunami disaster was apparent on the way they acquired information regarding Lampung tsunami as well as the communication among group members for that purpose. Informality was also apparent on another temporary field hospital in one village office in South Lampung as well as in Indoor Tennis Court of Kalianda. Here, doctors who were out of duty came and helped treating patients without formal assignment from their associations and their offices as well. It means there were no fixed schedule of doctor's assignment and consequence of absentee of a doctor in providing treatment in Refugee Center. It is different from the doctors who perform duties as part of their assignments as government employee through Regency Office of Health.

IDI did not function in *prevention* of disaster, it does have concerns with *preparation* in which this professional organization has directly and indirectly provided its members with knowledge and skill for treating disaster victims through their periodic meetings, workshops, seminars, trainings, etc (source: interview 1 January 2019). The informant said that this Association has maintained high alert on disaster after the mega-tsunami disaster in the Province of Aceh and North Sumatra in 2006.

Different from IDI, the members of *Himpunan Psikologi Indonesia* (HIMPSI) or Association of Psychology responded and came to the disaster area much later after some survivors of the tsunami showed some psychological problems. Members of the HIMPSI, working independently or in cooperation with government institutions, initiated programs and activities to *respond* to these situations. Psychological treatment and services went beyond this and spanned to *recovery*. Other than being involved in responding and recovery of tsunami disaster, HIMPSI and its members also involved in *preparation* for disaster through trainings for updating members' knowledge and skills in coping with psychological disorders.

These two professional groups (IDI and HIMPSI) did not have specific agreed arrangements for working together with other government institutions; however they agreed on some administrative arrangements such as work schedule, work load, distribution of working area, using and sharing of facilities, etc (source: interviews 3 January 2019 and 18 July 2019).

3.3 Governance of the Non Government Organizations (NGO) and Community Based Organizations (CBO) in Countermeasuring Tsunami Disaster

There are much more varied involvements of NGOs and CBOs in tsunami disaster countermeasures than professional groups. A preliminary study of media coverages and on-site- observations as well as interviews and FGDs, show that at least these following organizations conducted disaster countermeasures in one way or the other: Muhammadiyah Disaster Management Center (MDMC); Nahdatul Ulama; Gajah Mada University Alumni Association (Keluarga Alumni Universitas Gajah Mada/Kagama) Care; Disaster Response Unit/Deru, Komil, Jangkar Perahu Pustaka, Persatuan Istri-Istri Sarjana Ekonomi Indonesia (PIISEI), Forum Partisipasi Publik untuk Pemberdayaan Perempuan dan Perlindungan Anak (Forum PUSPA) Lampung, etc. These organizations represent different organizational levels, from internasional, such as MDMC, up to national ones such as Fatayat NU, Kagama Care, and PUSPA; to local ones such as Komil, Jangkar Perahu Pustaka, PIISEI.

These organizations applied different governance systems both in regulating their internal structures and in cooperation with other external actors. The internationally reknown MDMC has formal structures as its larger community based organization, Muhammadiyah such as regulations for membership, for structures, for codes of conducts, for transparency and accountability principle, for funding principle, etc. It has clear institutional vision and mission, permanent office address, clear programs, clear structures and organisers (<https://www.republika.co.id/berita/nasional/sang-pencerah/pm367i368/mdmc-satusatunya-tim-medis-indonesia-terdaftar-di-who>; 25 July 13:38). It functions in all disaster stages, from prevention up to recovery and rehabilitation (Source: interview 23 January 2019). Others mostly involve merely in the stage of *disaster response* (source: observations on 25 December 2018 and 1 January 2019) or preparation and response by Kaagama Care, NU, Deru (source: observations on 1 January 2019 and 2 February 2019; FGDs 2 February 2019).

3.4 Multistakeholder Metagovernance: Governance of Governance System between Government, Professional and NGOs/CBOs Institutions on Disaster Countermeasures

What can we learn from the previous result and analysis? Was there network metagovernance hibrid arrangements [10]; or the organization of self-organization, the regulation of self-regulation, the steering of self-steering, the structuring of the game-like interaction within governance networks, and interaction among actors to influence parameter changes to the overall system [11]? Is there any metagovernance in the type of network governance which shows a very strong new type of agreed governance among three types of organizations (government, professional, and NGOs/CBOs). Or do we see more multi-stakeholders partnership governance which links different types of governance [14] which means institutions are mostly directed by their own rules and regulations when entering the partnership and do not surrender their basic principles or rules in doing so.

In the stage of *prevention*, development of early warning system, vulcanology and geological disaster mitigation, remote-sensing technology and data as well as aerospace facilities, disaster-proof transportation facilities, disaster sensitive schools buildings and hospitals were performed differently and separately by different organizations from government sector and NGOs/CBOs sector. There were coordination meetings and MOUs between BNPB with other groups. (Source: interview, 23 January 2019). On the *preparation* stage (trainings, procurement of supplies, development of respective standard operating

procedures, budgets and manpowers) a similar model of multistakeholders metagovernance was also apparent. Rules from other institutions were considered, however there was no guarantee that similar activities and supplies would not be taken and provided by other institutions.

On the *response stage*, a lot of informal agreements were made to make ‘a coordinated actions’ among all stakeholders of disaster. The first one was distribution of tasks on evacuation period, including evacuation of victims, provision of shelters, provision of basic needs, provision of emergency health service, clearance of debris and other materials from the tsunami, traffic management to and from the disaster areas, up to provision of human resources to escort high officers coming to the region. On the *recovery period*, a little more organized activities among those stakeholders were quite apparent especially with regard to provision of temporary housing, management of fund donated by other governments from all over Indonesia, as well as economic activity recovery. There were many meetings coordinated by South Lampung Government to set informal agreement about several things: (1) area distribution for development of temporary housings for each institution interested indeveloping; (2) decision on unit price of each temporary housing; (3) management of fund donation; (4) distribution of facilities and supplies for economic activity of the tsunami survivors; (5) provision of long-term psychological treatment of the survivors; (6) community economic empowerment program, especially for the recovery of coastal tourism industry (Source: FGDs, interviews, and observations). These informal agreements than later will be the source of conducts of the stakeholders, but they would do it with several modifications and adjustment to their respective institutional policies and capabilities.

All those four stages on disaster countermeasures on South Lampung tsunami show that the pattern of governance on disaster in the last tsunami in South Lampung was more of the multistakeholders-metagovernance. There are many organizations and institutions involved in countermeasuring the disaster. Three types of organizations existed in this regard: government institutions, NGOs/CBOs (especially MDMC and Nahdhatul Ulama); and professionals (doctors and psychologists). These organizations and institutions share functions on four stages of disaster countermeasures; yet they did not set one agreed common governance in doing the functions. They adopt their own, finance and deploy resources on their own capabilities and capacities. From the lens of theory on metagovernance, this type falls in the category of multistakeholders meta-governance.

Table 1. Comparison of types of governance on disaster by stakeholders of disasters

Organizations	Styles of Governance on Disaster Stages			
	Preparation	Response	Recovery	Rehabilitation
Government	Formal-structured	Formal-informal-structured	Formal-structured	Forml-structured
Professional	Formal-unstructured	Formal-unstructured	Formal-unstructured	-
NGO/CBO	formal-structured -informal-unstructured	formal-structured -informal-unstructured	formal-structured	formal structured

According scholars on metagovernance, success of metagovernance partnership is based on an inclusive process, locally adapted design of common standard, and institutionalized compliance management [12]. Data show that factor for the success was an inclusive process in which through in-situ informal emergency meeting all agree to share duties and functions for the sake of the victims of tsunami disaster. They share human resources, agreed on

schedule and distribution of emergency operational areas of duties, perform functions that were unique to their respective organizations' and associations' capabilities and capacities as well as helping and supporting each other in providing services for tsunami victims and survivors (source: FGD with South Lampung Regency Government on 4 February 2019). The FGD also shows that locally adapted of common standard was partly adopted for the decision regarding unit price for temporary housings of the victims and survivors which was set at 16 million rupiahs per unit. This means that all temporary housings provided by government, NGOs or other fund sources must meet this unit price. This price standard was set to guarantee that all temporary housings meet certain minimum criterias. This locally adapted of common standard was yet applied for other aspects, such as shelters' condition, emergency kit, food and beverages, infant and women specific needs, and a lot more.

Institutionalized compliance management was also still missing from the disaster countermeasures. Although according to Law number 24/2007 regarding BNPB, this agency is the coordinator of prevention, preparation, response and recovery to disasters, decides that the statues of any disaster (whether it is national, provincial, or local) are equipped with funds, manpower, logistics, warehouses and a Quick Response Unit to Disaster, yet it can not really manage compliance of other stakeholders in countermeasuring tsunami disaster in South Lampung, especially from many small NGOs and CBOs during emergency response stage. There were many temporary shelters for survivors run by these organizations and by other local initiatives which were far from meeting minimum standards, especially temporary shelters on top of hills surrounding the tsunami disaster area. Due to traumatic experience with the tsunami, many survivors declined order to stay in temporary shelters provided by government and big NGOs and preferred to stay on top of hills with almost non existent of protection from rain and heat as well as wind, no sanitation, no electricity. BNPB could not manage compliance due to minimum two factors: South Lampung tsunami disaster was declared as local disaster which means that BNPB did not have any direct intervention for the disaster countermeasures and that there was no agreed standard of compliance to be managed and institutionalized.

4 Summary and Suggestions

Multistakeholders partnership meta-governance or governance by involving partnerships from multi-institutions (state, professional, and the society) occurred in the response to the tsunami disaster in Lampung, 2018. However, the partnership of stakeholders in disaster countermeasures has not been able to overcome the problem of disaster countermeasures marked by the lack of awareness of the society about the tsunami disaster, and disaster countermeasures has not been resolved to date until the weak coordination of disaster countermeasures among the related agencies such as governance agencies, professional associations, and society organizations. The result of the research indicates that:

1. There are memorandum of understandings (MOU) written among disaster countermeasures stakeholders, especially between BNPB with other stakeholders of disaster countermeasures; however the MOUs are not used as a basis for further development of an integrated approaches, standard operating procedures, mechanism of field operations, and the distribution of resources in disaster counter measures.

2. Each institution and organization still holds their respective institutional governance as the most important source of conduct on four stages disaster countermeasures: prevention, response and recovery.
3. Although the stakeholders of disaster countermeasures have their respective institutional governance, the governance offices and institutions, society-based organizations, and professional associations have developed multi-stakeholders partnerships that bind them together in tsunami disaster countermeasures

We suggest that metagovernance can be better applied in disaster countermeasures if it refers to the optimization of governance management, so the governance is created with more planned and organized partnership from state institutions, professional associations, and society organizations. There is also a need of a binding regulatory support among multi-stakeholders in disaster countermeasures. As the end of article stated, we conclude that locally adapted design of common standard and institutionalized compliance in countermeasuring disasters among stakeholders need to be enhanced in the future.

We also suggest that there should be solution for a better and cost effective disaster response condition. It is to note that excessive and unplanned aid may create chaos and it does not help the targeted population.

References

- [1] J. . Eiser *et al.*, "Risk interpretation and action; A conceptual framework for responses to natural hazards," *Int. J. Disaster Risk Reduct.*, no. 1, pp. 5–16, 2012.
- [2] S. . Potter, J. . Becker, D. . Jhonston, and K. . Rossiter, "An overview of the impacts of the 2010-2011 Canterbury Earthquakes," *Int. J. Disaster Risk Reduct.*, vol. 14, pp. 6–14, 2015.
- [3] S. Ruffat, E. Tate, C. Burton, and S. Maroof, "Social vulnerability to floods: Review of case studies and implications and measurement," *Int. J. Disaster Risk Reduct.*, vol. 14, pp. 470–486, 2015.
- [4] Z. Zulfadrim, Y. Toyoda, and H. Kanegae, "The Integration of Indigenous Knowledge for Disaster Risk Reduction," *Int. J. Disaster Manag.*, vol. 2, no. 1, 2019.
- [5] S. Senarath., "A Study on the Affected Children's Coping Strategies and Psychological Adjustment Following a Natural Disaster in Sri Lanka," *Int. J. Disaster Manag.*, vol. 2, no. 1, 2019.
- [6] M. Hosseini, V. Ghobadian, and R. Alizadeh, "Specific Architectural and Structural Design of an Earthquake Disaster Management Multi-Purpose Complex," *J. Archit. Eng. Technol.*, vol. 6, no. 1, 2017.
- [7] S. Mauludin, E. Meilianda, and S. Syamsidik, "Level of Coastal Protection Damage and Priority of Handling. (Case study of Alue Naga-Neuheun, Aceh Besar, Indonesia)," *Int. J. Disaster Manag.*, vol. 2, no. 1, 2019.
- [8] A. La Cour and N. . Andesen, "Metagovernance as Strategic Supervision," *J. Public Perform. Manag. Rev.*, 2016.
- [9] A. Stark, "More micro than meta? Competing concepts of meta-governance in the European Union," *Sage Journals Public Policy Adm.*, 2014.
- [10] S. Bell and A. Park, "The problematic meta-governance of networks: water reform in New South Wales," *J. Public Policy*, vol. 26, no. 1, 2006.
- [11] B. Jessop, "Metagovernance," 2011. [Online]. Available: <https://www.researchgate.net/publication/285098717%0A>.
- [12] L. Mundie, M. Beisheim, and L. Berger, "How Private meta-governance help standard-setting partnership deliver," *Sustain. Accounting, Manag. Policy J.*, vol. 8, no. 5, pp. 525–546, 2017.
- [13] Badan Nasional Penanggulangan Bencana (BNPB), "Profil Sumberdaya Kesiapsiagaan Nasional dalam Penanggulangan Bencana 2015," 2015.

- [14] M. Beisheim, A. Ellersiek, L. Goltermann, and P. Kiamba, “eta-governance of partnership for Sustainable Development: Actor’s Perspective from Kenya,” *J. Public Administration Dev.*, 2017.