

ARTICLE

# Involvement and Design of Strengthening Policy Actors in Tsunami Disaster Risk Governance in Padang City

Zikri Alhadi<sup>1,3\*</sup>, Ory Riandini<sup>2</sup>, and Karjuni Dt. Maani<sup>3</sup>

<sup>1</sup>Research Center for Policy, Governance, Development and Empowerment, Universitas Negeri Padang, Padang, Indonesia

<sup>2</sup>Master of Public Administration Program, Faculty of Social and Political Sciences, Universitas Andalas, Padang, Indonesia.

<sup>3</sup>Departement of Public Administration, Faculty of Social Science, Universitas Negeri Padang, Padang, Indonesia

How to cite: Alhadi, Zikri., Riandini, Ory., & Maani, Karjuni Dt. (2023). Involvement and Design of Strengthening Policy Actors in Tsunami Disaster Risk Governance in Padang City. *Jurnal Borneo Administrator*, 19 (3), 285-300. <https://doi.org/10.24258/jba.v19i3.1164>

## Article History

Received: 18 July 2022

Accepted: 18 November 2023

## Keywords:

Disaster Risk Governance;  
Tsunami;  
Policy Actor.

## ABSTRACT

This paper is based on research that describes the involvement and design of strengthening policy actors in tsunami risk governance in Padang City. This paper also describes the policy design for strengthening disaster risk governance based on these actors' participation in research findings. The approach used in this research is a qualitative method with data collection through in-depth interviews, focus group discussions, and data studies. Data processing and analysis were performed using matrix coding and model design on the NVivo 12 Plus. The research findings illustrate that the involvement of local government actors is at the highest level in disaster risk governance policies in Padang City. Furthermore, non-governmental organisations, communities, vertical governments, digital communities, and business sector actors have successive roles in disaster risk policies. Recommendations for the involvement of local communities can be made by increasing capacity and engaging in disaster risk governance actions. On the other hand, the recommendation of non-governmental organisations (NGOs') participation should be maintained and facilitated by designing regulations that reduce the risk of a tsunami disaster. Local governments are involved in strengthening budgeting, coordination, and partnerships as the leading sector in disaster governance.

## A. INTRODUCTION

As a disaster-prone country, Indonesia has strengthened disaster risk governance since the earthquake and tsunami devastated Aceh and its surroundings in 2004 (UNOCHA, 2017). Nevertheless, the challenge of disaster risk reduction remains an important priority because it is related to the potential for social and economic losses. Moreover, with the potential for multiple disasters in Indonesia caused by climate change, environmental damage, uncontrolled population growth, and social inequality, the Indonesian government faces a relatively high challenge (Martin JD, 2018; UNOCHA, 2017; Trias & Cook, 2021). After the earthquake and tsunami in Aceh on December 25, 2004, community concerns about the earthquake and tsunami on the west coast of Sumatra increased. Geophysicists explained that the west coast of

\* Corresponding Author

Email : zikrialhadi@fis.unp.ac.id

Sumatra, including Padang City, is one of the regions with the highest earthquake and tsunami vulnerability in Indonesia due to the meeting of two active plates, namely the Euro-Asia and Indo-Australia plates (Balian et al., 2019). Furthermore, Padang City on The West Coast of Sumatera Island suffered a devastating earthquake on September 30, 2009, which caused thousands of victims, and buildings and public facilities were destroyed during the incident (Alhadi, 2014; Alhadi et al., 2018). For this reason, the city of Padang needs preparation for disaster risk reduction, one of which is to carry out relevant studies, including disaster risk management.

Institutionally, Indonesia already has a legal basis in Law Number 24, the Year 2007, concerning disaster governance along with a set of derivative regulations such as government regulations, presidential regulations, regulations from the Chairman of the National Disaster Management Agency (BNPB), Regional Regulations, and relevant decrees from the head of regions. Disaster governance has been implemented legally at both central and regional levels. The institutional mechanism is regulated by explaining the authority and responsibilities of each disaster governance institution. Law No. 24 of 2007 has described that a region for a particular time decreases the capability to prevent, mitigate, be prepared, and respond to any emergency caused by the region condition (Alhadi et al., 2018). The government and all stakeholders must strengthen disaster governance in every development planning, policy, and program (Jones et al., 2015).

A form of paradigm shift is how to improve the application of disaster risk governance from "response and recovery" to "prevention and preparedness" (Renn, 2015). However, Indonesia's comprehensive application of disaster risk governance has not been a priority. From the facts, institutional disaster risk governance is still carried out partially, tends to be reactionary, and does not involve all concerned actors. Stakeholders in disaster governance have been formed, but synergy and collaboration have not yet occurred optimally. Sectors still run many institutions and not at the level of collectivity. As a result, the goal of disaster risk governance, which is to strengthen resilience and reduce vulnerability, is still an arduous task. Disaster risk governance is referred to as a theme relating to the complex environmental and social governance of all types of disaster risk, where a combination of institutions, laws, regulations, and contributions from civil society and private sector actors are needed (Djalante et al., 2013; Bang, 2013).

Sendai Framework for Action explains disaster risk governance as a way in which all stakeholders, both from the public sector and the private sector, including the media and civil society, coordinate to manage and reduce the impact of disasters on community, national, and regional levels. The Hyogo Framework performance assessment suggests that this has a minimal effect on improving governance at the international, national, and local levels, in particular, to reduce social vulnerability and empower vulnerable groups in particular (Alam & Ray-Bennett, 2021; Hiwasaki et al., 2014; Ray-Bennett, 2018; Djalante & Lassa, 2019). Disaster risk governance is a theme related to the complex environmental and social governance of all types of disaster risk, which requires a combination of institutions, laws, regulations, and contributions from civil society and private sector actors (Djalante et al., 2013). Disaster risk governance is often characterised as a risk governance system that is collaborative, multi-sectoral, and multi-level. In addition, disaster risk governance is seen as more innovative and accountable with various approaches to dealing with environmental and disaster problems due to its adaptive nature and problem-solving-based learning orientation (UNISDR, 2015). As mandated by the Sendai Framework, UNDP describes disaster risk governance as: "an effort by public agencies, public servants, the business world, and civil society to collaborate to reduce disaster risk" (Jones et al., 2015).

It focuses on how the influence of the government as an actor nationally and sub-nationally can coordinate in managing and reducing the impact of disasters (Bang, 2013). This

understanding is still focused on coordination at every level of government to work together to mitigate the result of a disaster. To further deepen understanding, Jones further explained that three dimensions define disaster risk governance, namely, first, the "upward" shift is evident, and this has taken the form of government accountability to global institutions, which have established legally binding mechanisms and structures in the form of global, regional, national, and local platforms through which they govern. Second, disaster risk governance is "outgoing" or mainstreaming and requires sectors to integrate disaster and development into one framework. One of the biggest challenges is mainstreaming disaster risk governance, which requires a change in mindset from response to prevention orientation. Third, "downward" or decentralisation of disaster risk governance loosely refers to the delegation and transfer of powers or functions of government from the national level to the sub-national level.

Disaster governance evolved with the paradigm shift in disaster risk reduction and management in the early 2000s, then developed in theory and practice, with an increase in understanding of disaster risk and support for a more proactive and participatory approach to disaster risk reduction (Forino et al., 2021). Disaster risk management activists finally understand that disasters do not arise from extreme natural hazard events, which often indicate problems in development and governance. Stakeholders in disaster risk management then understood the need to move from ad hoc and independent disaster management towards more systemic and integrated risk reduction (Forino et al., 2021). Local governments, non-governmental organisations (NGOs), the private sector, and community organisations are usually at the forefront of responding to any disaster or emergency before the arrival of national authorities. However, the role of local institutions in disaster management is well-empowered in many developed countries but less empowered in developing countries, especially in raising awareness and emphasising the importance of the role of government and local institutions in community-based disaster risk reduction activities (Mondal et al., 2018; Madan & Routray, 2015; Ainuddin et al., 2013, Alam & Ray-Bennett, 2021).

Then, in this study, an analysis was carried out to see the tendency of actors in policy design to strengthen disaster risk governance based on the concept presented by (Fischer et al., 2015) about the dimensions of actors in public policy. The descriptors identified based on research observations are as follows: vertical/central government agencies, local governments, non-governmental organisations and communities, and the private sector are the main actors in tsunami disaster risk governance in Padang City. Furthermore, this study focuses on the design of policies to strengthen disaster risk management. It is a relatively new study because it designs policies for tsunami risk reduction based on supporting policy actors to enhance disaster risk management in Padang.

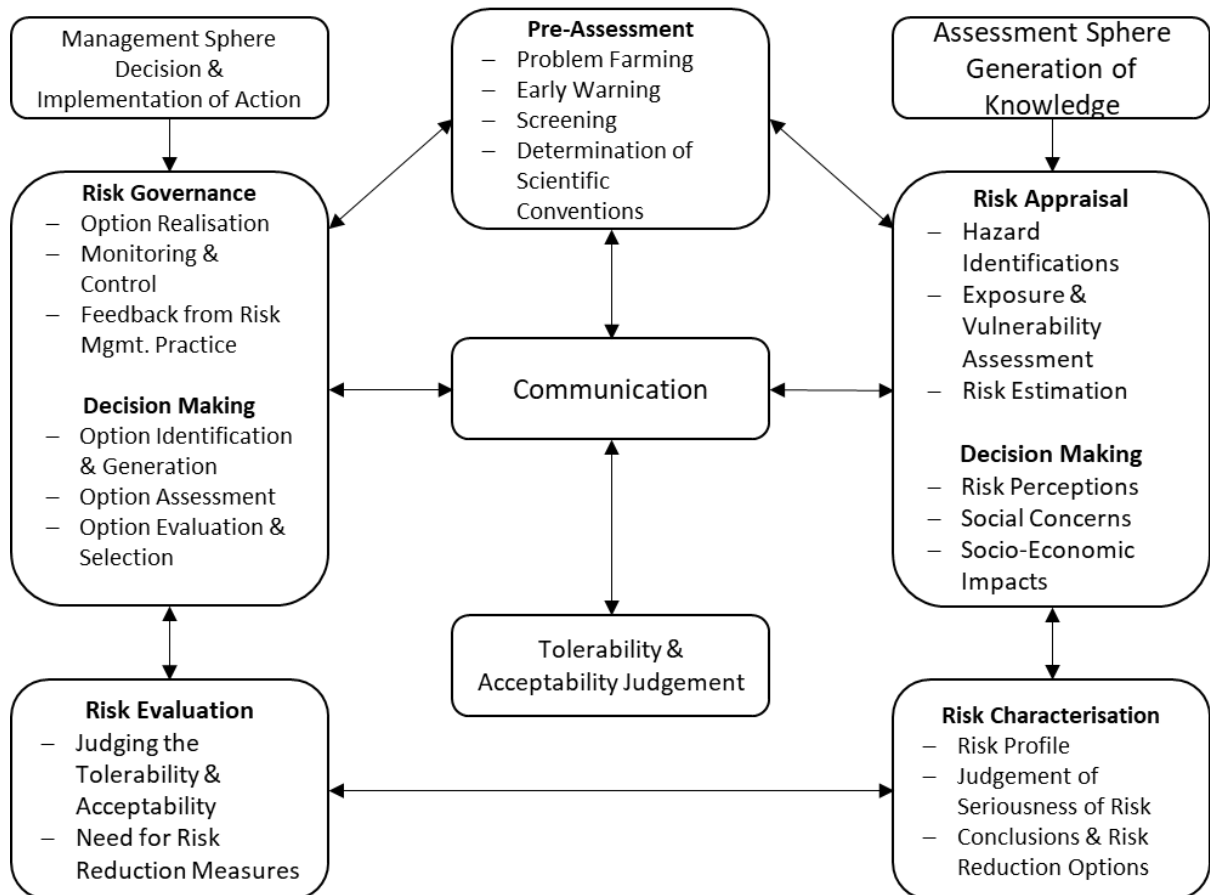
## **B. LITERATURE REVIEW**

In the last twenty years, the term 'governance' has received many concepts from many fields, including policy science, environmental studies, and risk management. The shift from 'government' to 'governance' reflects a non-hierarchical arrangement combining state and non-state actors to give birth to binding policies without a dominant authority (Alam & Ray-Bennett, 2021). This change illustrates the reduction of the state's role and accommodates the importance of non-state actors in the government process. In other words, the government can be explained as a way to unite various government institutions that provide services to citizens so that it can be realised in the involvement of state actors, between sectors, between governments and non-states in collective decision-making and policy implementation (Alam & Ray-Bennett, 2021).

As a new concept, disaster risk governance was included in the 2004 UNDP report entitled "Disaster Risk Reduction: Challenges for Development," whose substance is the

implementation of tasks and functions in the economic, political and administrative fields to cope with disasters in every level (Vij et al., 2020). Furthermore, disaster risk governance is described as a combination of regulation and practice to mitigate risk and respond to disasters (Miller & Douglass, 2015; Daly et al., 2017; Vij et al., 2020). UNDP defines disaster risk governance as "an avenue for public agencies, civil servants, the media, the private sector, and civil society at the community, national and international levels to undertake partnerships to reduce disaster and climate risk" (UNDP, 2013). Furthermore, disaster risk governance ensures the availability, capacity, and resources to prevent, mitigate, prepare for, manage, and recover disasters. Therefore, disaster risk governance refers to disaster risk management as a system that ensures stakeholders' capacity and full participation to increase resilience (Hemachandra et al., 2020). Disaster risk governance is a process within organisations and institutions to reduce disaster risk and the governance of its impacts involving multiple actors from governments, international organisations, non-governmental organisations, local communities, religious leaders, academics/scientists, and the private sector involved in disaster risk governance and jointly connected in a network in managing disaster risk reduction (Renn, 2015; Trias & Cook, 2021). Meanwhile, good disaster risk governance ensures efficient and effective delivery of the results of economic, social, and environmental decisions. It requires the involvement of stakeholders during conditions of uncertainty due to disasters and minimising their impacts (Hemachandra et al., 2020; Renn, 2015).

Good disaster risk governance is based on empowerment, participation, representation, deliberation, alignment, and predictability (Trias & Cook, 2021). And guidance for stakeholders to take action (Forino et al., 2021; Trias & Cook, 2021). Furthermore, understand how the pattern of disaster risk governance framework can be seen in Figure 1.



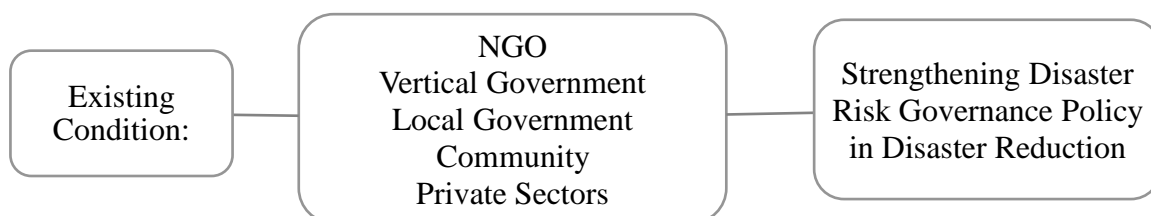
(Source: (IRGC, 2017))

Figure 1. Disaster Risk Governance Framework

Based on Figure 1, the disaster risk governance framework explains that several aspects must be considered in its implementation, including governance decision on and implementation of the action, assessment generation of knowledge tolerability, and acceptability judgment (IRGC, 2005). This aspect is derived from several dimensions and makes communication the primary dimension in ensuring the implementation of disaster risk governance is adequately achieved. In recent years, risk governance, as defined by the IRGC, has emerged as a focal point of policy attention to increase community resilience to disasters (Alexander et al., 2016). Finally, the relationship between the population and institutions is enforced in a top-down and bottom-up manner through a participatory approach (Usón et al., 2016; Ardaya et al., 2019).

As stated by Seng (2013), the results of previous studies explain that strengthening institutional and governance actors is seen as a cross-sectoral activity increasingly being recognised in community-based Disaster risk governance policies. Many institutions enhance the level of disaster resilience and capacity, but some are lacking in systematic methodological aspects. This paper examines, discusses, and provides insight into disaster risk preparedness, particularly in the context of tsunami risk, through an analysis of formal institutions, architecture, and government systems related to developing a Tsunami Early Warning System (TEWS) in Indonesia after the December 2004 tsunami disaster. Meanwhile, the disaster risk has recently increased due to the potential for climate-related hazards that have caused many problems, especially in coastal cities (Artiningsih et al., 2016). Despite the increasing risk, many regions in Indonesia may not yet have sufficient capabilities to address all the challenges of disaster risks. It was further explained that it could be concluded that the community has the best ability compared to other disaster risk management actors (Artiningsih et al., 2016).

In answering the questions in this study, the researcher designed a framework by describing the initial design of policies to strengthen governance in reducing tsunami risk in the city of Padang. For more details, see the figure 2.



(Source: Fischer et al. (2015))

Figure 2. Analytical Framework for the Design of Actor Strengthening Policies to Improve Governance in Tsunami Disaster Risk Reduction in Padang City

Based on the conceptual framework, figure 2 above shows a policy design for strengthening disaster risk management starting from the existing conditions of the tsunami disaster management policy in Padang. Then, in this study, analysis and design of policy designs were carried out to strengthen the role of actors in disaster management governance based on the concept presented by Fischer et al. (2015) about the dimensions of actors in public policy. The descriptors identified based on research observations are as follows: vertical agencies/central government, local governments, non-governmental organisations, and the community, as well as the private sectors, are the main actors in tsunami disaster management in Padang City.

Furthermore, Bae et al. (2016) explain that decentralisation efforts in disaster risk governance have gained a lot of focus with the increasing global urbanisation and the increasingly complex nature and types of disasters in dense urban areas. In detail and

specifically, it will explore the changes and development of disaster risk governance institutions at the national level in disaster governance. However, the Central Government has succeeded in designing a disaster risk governance system at the national level that is integrated and comprehensive so that disaster risk governance can be decentralised to the regions. Nevertheless, implementing decentralisation in disaster risk governance still requires further strengthening and collaboration at the tiered (vertical) and broader (horizontal) levels so that disaster risk governance is more decentralised.

### C. METHOD

The research approach used in this study is qualitative. Therefore, subjective data is the investigator's perspective (informant) in this study without any reduction or addition. Data was collected through in-depth interviews, focus group discussions, and documentation studies. The number of informants used as data sources was 25 people from the central government, regional governments, non-governmental organisations (NGOs), communities, and other community groups. Data were analysed and processed using Computer Assisted Qualitative Data Analysis Software (CAQDAS), Nvivo 12 Plus, for the coding process. The coding process is interactive, where the researcher forms data categorisation based on the concepts that appear in the data, compares the ideas and data categories, and reunites all the thoughts and data categories related to one another (Bandur, 2016).

This study used the following data collection techniques: Library research, namely research conducted by searching, collecting, and studying books and other literature that has something to do with the problem under study to obtain secondary data to be used. as a theoretical basis in viewing and discussing the facts encountered in research in the field. Second, through in-depth interviews, namely data and fact collection techniques, conducting direct questioning or asking for straightforward explanations from parties related to the research object. Third, driving Focus Group Discussions (FGD) collects small groups of formal and temporary participants who interact in exploring discussion themes (Sarosa, 2017).

This research was conducted in the city of Padang with the aim of various institutions/institutions/communities that are stakeholders in disaster management efforts, vertical government agencies and regional agencies, as well as civil society institutions in the form of Non-Governmental Organizations (NGOs). Furthermore, to obtain primary data in this study, researchers determine people or informants considered to know and can be trusted to become critical informants relevant to the research topic. It was done assuming that the selected informants are responsible, understand the appropriate context, have authority and play an active role in implementing disaster management policies, especially in the city of Padang. The following is a list of informants for this study, see the Table 1.

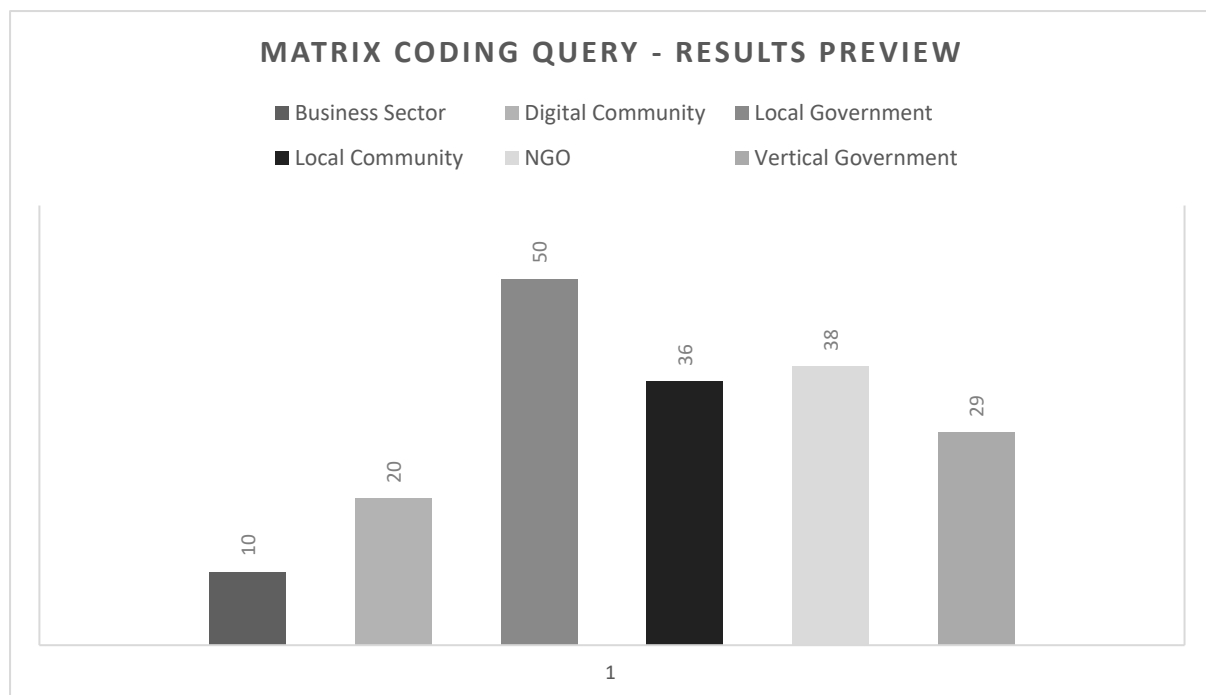
Table 1. Informant Institution / FGD Participants

No	List of Informant Institution / FGD Participants
1.	BNPB RI
2.	BPBD of West Sumatera
3.	BPBD of Padang City
4.	KOGAMI
5.	FPRB of West Sumatera
6.	FPRB of Padang City
7.	FKSB of Padang City
8.	PMI of West Sumatera
9.	PMI of Padang City
10.	Mercy Corps
11.	Disaster expert

## D. RESULT AND DISCUSSION

### The Involvement of Actors in Tsunami Disaster Risk Governance in Padang City

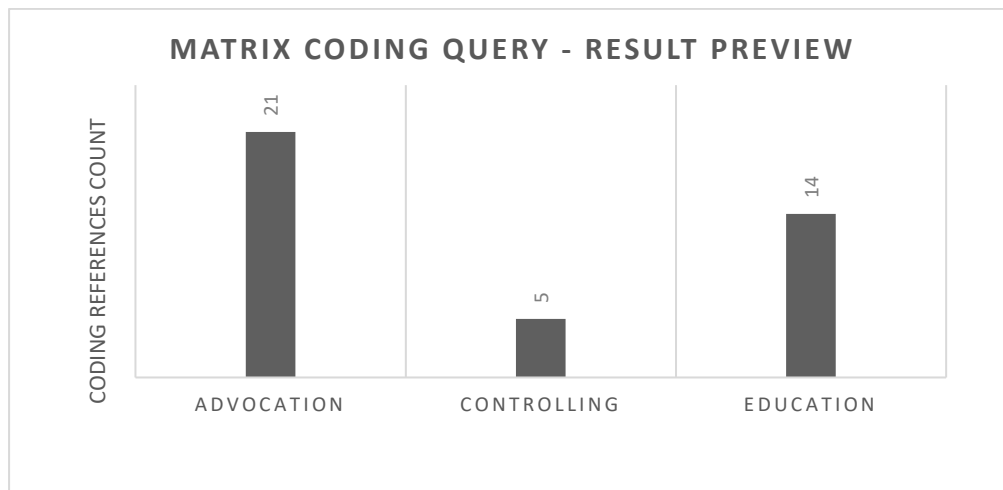
Based on the analysis of the results of observations, focus group discussions, interviews, and documentation studies that refer to the draft descriptors in the conceptual framework of the study adopted from Law No. 24 on Disaster Governance, the actors involved in disaster risk governance policies are described in the following figure 3.



(Source: Processed Researchers Data with NVivo 12 Plus (2021))

Figure 3. Matrix Coding Results for Actors' Dimensions

Figure 3 above explains that the highest tendency involvement of actors involved in disaster risk governance is found in local government descriptors. Various regulations at the central and regional levels mandate local government participation in disaster risk governance. It is interpreted as the Padang city government is responsible for being the region's leading sector in disaster governance. In the second position, the involvement of non-governmental organisations in the reduction is also relatively high because, in practice today, non-governmental organisations (NGOs) have initiated many disaster risk governance programs to increase the capacity of the community and the apparatus. The role of non-governmental organisations in various policies and programs is distinct and primarily related to education, supervision, and assistance. Even documents and regulations of disaster governance produced by the Padang city government are accompanied by many non-governmental organisation designs. Some non-governmental organisations also use the budget from domestic and foreign donors to develop the capacity of institutions and communities so that it does not depend on the Padang city government's budget (*APBD*) in designing and implementing disaster risk governance programs. In detail, the tendency of the role of non-governmental organisations in reducing tsunami risk can be seen in the following Figure 4.



(Source: Processed Researchers Data with NVivo 12 Plus (2021))

Figure 4. Matrix Coding Results from the Role of Non-Governmental Organisations (NGOs) in Tsunami Disaster Risk Governance in Padang City

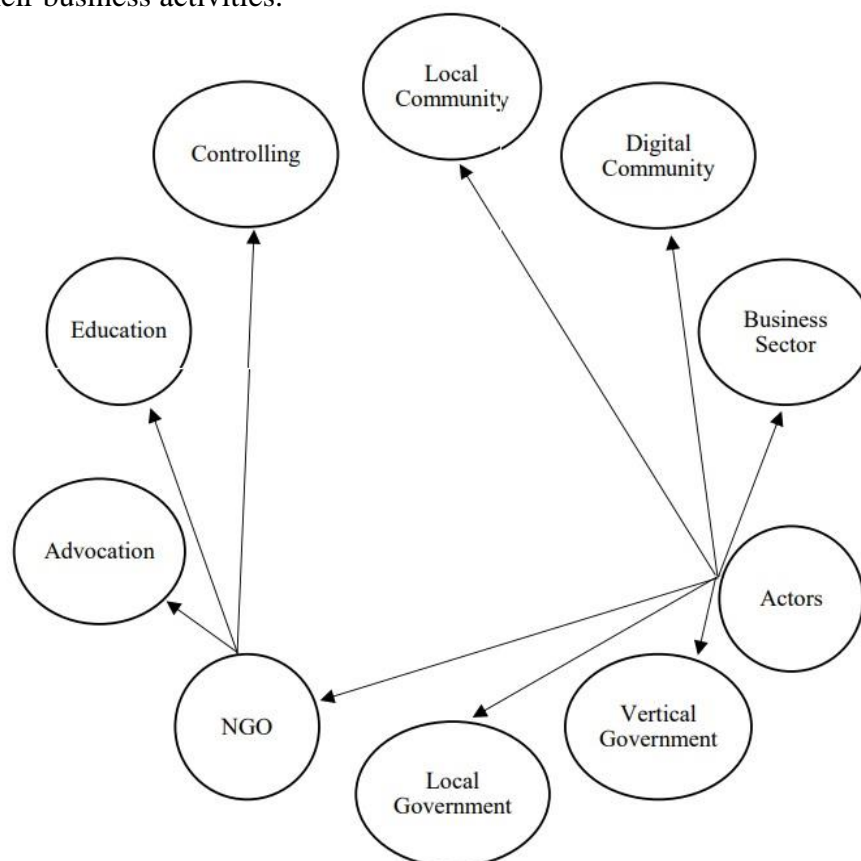
Figure 4 above explains that in Padang City, the highest tendency for non-governmental organisations' involvement was in advocating for various disaster risk governance policies for tsunamis and programs carried out by the central and regional governments. Therefore, the following descriptor is education to increase the community's capacity and the apparatus (government officials) responsible for disaster governance in Padang City. The last is controlling efforts by supervising and criticising policies and programs for disaster risk governance planned and implemented by relevant stakeholders. Furthermore, the third position involves the local community in disaster risk governance. Empowerment and capacity-building programs by the government and non-governmental organisations (NGOs) working in the disaster sector have resulted in relatively high local community participation. Although it has not yet touched most of the tsunami risk-prone communities in Padang city, various education, training, and assistance have been carried out, especially after the earthquake and tsunami in Aceh and surrounding areas in 2005.

The assistance provided is indeed limited to programs that have been implemented, such as a disaster-resilient village program, the formation of community preparedness groups, community-based Disaster preparedness, and disaster-smart families. The educational institution capacity-building programs that have been carried out include Disaster Preparedness Schools, Disaster Safe Schools, Disaster Smart Schools, and Disaster Safe Education Units. The main problem of this program is its sustainability in terms of assistance and the required budget.

The fourth position is the involvement of the Vertical Government in disaster risk governance. The central government is involved in designing regulations, guidelines, and disaster risk governance programs and providing assistance to ensure the rules, procedures, and programs are adequately implemented. Besides, the central government supports budgets, especially the Special Allocation Fund (*DAK*) scheme used to construct critical facilities, implement disaster risk governance programs, and improve operational systems for disaster governance procedures in the regions.

The fifth is the digital community, which is categorised as still low based on the findings of this study. The absence of specific programs designed to take advantage of digital circles makes the level of involvement of the digital community relatively low. Although the facts found are known, the use of social media to disseminate the latest disaster information is quite intense. However, it is still not integrated with comprehensive disaster governance policies, such as providing disaster education and socialisation efforts to save themselves independently

from the community and preparing family evacuation plans. The last is the involvement of the business or private sector, which is still small, to reduce the risk of the tsunami disaster in Padang City. The private sector's participation is still minimal, as evidenced by the research findings that few companies operating in Padang City are actively involved in this activity. Efforts to reduce the risk of disasters carried out by the private sector, especially the hotel sector, are to prepare a Permanent Procedure for Evacuating the earthquake and tsunami disaster to save themselves and hotel guests. Not many hotels in Padang City have initiated the program in their business activities.



(Source: Processed Researchers Data with NVivo 12 Plus (2021))

Figure 5. Policy Design in the Actor's Dimension for Strengthening Government Disaster Risk

The scheme obtained the analysis results using the NVIVO 12 Plus software project map tools to describe strengthening disaster risk governance from the actors' dimension. The policy design was built to enhance the involvement of the actors in reducing the risk of tsunami disasters by ensuring each stakeholder's duties, functions, and authorities run well. First, the business sector descriptors that have played a minimal role in disaster risk governance actions must be strengthened based on the closest range of the actors' dimensions. Therefore, the policy offered is to design rules/regulations that are "forced" so that the private sector is actively involved in certain limits to help strengthen disaster risk governance in Padang. The rules included are the obligation to provide evacuation guidelines, evacuation SOP preparation, employee capacity building, provision of critical facilities, routine simulations, and compliance with building resilience from disasters. However, these obligations have been regulated by various rules but do not include sanctions for those not complying with existing provisions.

The second is a draft policy design that strengthens vertical governance actors' involvement in reducing the tsunami disaster risk in Padang City. Standing agencies have

considerable authority and budget in disaster governance that should prioritise using such command and funding to strengthen the disaster risk governance of the tsunami disaster in Indonesia, especially in Padang city. The involvement of vertical governance in question indeed focuses not only on disaster emergency response but also on how to function the authority and budget in disaster risk governance programs—for example, building adequate critical facilities, strengthening institutional capacity in the regions, and building community preparedness in facing disaster risks. The essential thing is implementing the policies and regulations that have been designed and evaluating and improving policies that are not good or difficult to achieve.

Furthermore, the third is to involve the function of the digital community as part of the actor in disaster risk governance. Strengthening disaster risk governance can be implemented through policies that participate in the digital community in various disaster risk governance programs, such as warning and information dissemination about the threat of a tsunami disaster in Padang City. Dissemination of information about knowledge, preparedness, education, and early warning systems that have been designed through the existing SOPs can be improved effectively by using a measurable and verified social media platform. For this reason, the Local Disaster Management Agency (BPBD) of Padang City, as a leading sector in disaster governance, must have official social media accounts such as Instagram, Facebook, Twitter, and various other platforms managed by permanent administrators and always provide updated information with the latest conditions. Dissemination of information through social media and involvement in digital communities to increase preparedness will strengthen disaster risk governance against the tsunami disaster risk in Padang. Also, targeting the digital community as an actor in disaster risk governance will reduce the potential for spreading false news (hoaxes) that are troubling about disaster events in Padang City. This means officially verified information the digital community must disseminate through social media.

The fourth is strengthening the local government's role in reducing the tsunami disaster risk in Padang City. The role of local governance as one of the actors has been carried out based on disaster governance policies and programs carried out by the city government of Padang. Nevertheless, some problems still become obstacles to reducing risk in Padang city that can be overcome by policies to strengthen the commitment of regional government organisations that are stakeholders in reducing the risk of the tsunami disaster. Devotions from the regional apparatus organisations must be followed up in planning and budgeting for disaster risk governance programs relevant to their duties and functions. For this reason, the policy that needs to be designed and implemented by the Padang city government is to impose sanctions on regional government organisations that do not comply with the agreement in the disaster governance plan document that has been prepared by almost all stakeholders and promulgated in the form of regional regulations.

The fifth is designing policies to strengthen the role of the local community in reducing the risk of tsunamis in Padang City. Programs to increase the capacity of local communities in prevention and preparedness must continue to be carried out periodically and continuously and are supported by an adequate budget. Therefore, community involvement must be positioned as a subject in disaster risk governance policies so that the community has a significant role in designing and implementing relevant programs. Besides, community involvement should be contained in binding regulations regarding planning, budgeting, and implementing disaster risk governance programs for the tsunami in Padang City.

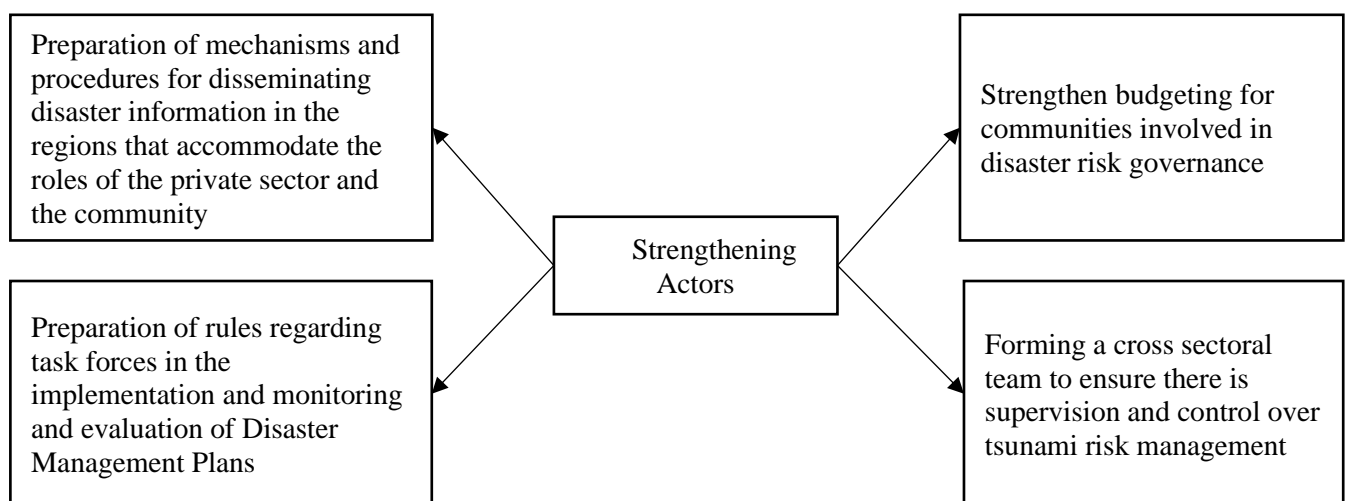
Sixth, ensure that non-governmental organisations (NGOs) continue to be effectively involved in various disaster risk governance policies of the tsunami and programs in Padang city. The existence of these non-governmental organisations (NGOs) is very supportive of government programs in strengthening disaster risk governance, especially the reduction of tsunami risk. The advocacy, education, and control efforts by non-governmental organisations

(NGOs) have been instrumental in designing and implementing various policies, programs, and documents related to tsunami risk reduction in Padang City. The role of non-governmental organisations (NGOs) needs to be strengthened by designing regulations on government partnerships with non-governmental organisations (NGOs) and the community in relevant programs to have a solid legal basis.

As Jones et al., (2015) have noted explicitly that over the past few years, several non-governmental organisations (NGOs) have committed to promoting policy change; others have been active in mainstreaming tsunami risk reduction, whereas many have been involved in capacity building and knowledge transfer to partners, particularly local government and communities. Based on the research findings, strengthening actors in governance policies in reducing tsunami risk can be done through several approaches, such as preparing mechanisms and procedures for disseminating disaster information in regions that accommodate the role of the private sector and the community. This is necessary so that the community and the private sector are involved as subjects in disaster risk governance while increasing preparedness and expanding the accessibility of disaster information related to tsunami risk in Padang City.

Then, it is necessary to draft rules regarding the task force in implementing and monitoring the Disaster Governance Plan (*RPB*), which covers every multi-sectoral stakeholder. To manage tsunami risks, stakeholders must comply with the *RPB* regulated by the Padang city government. Compliance with the *RPB* will ensure more effective disaster risk governance. Next, strengthen budgeting for Communities involved in disaster risk governance. The budget is used to build and strengthen community capacity in disaster risk governance. This means that local communities as actors are supported in their roles in disaster risk governance.

The next step is to design a policy to form a cross-sectoral team to ensure supervision and control over the governance of the tsunami disaster risks. This follows what (Jones et al., 2015) said in institutionalising disaster risk governance institutions, and it is necessary to integrate the entire organisational structure into a policy. And the integration must involve all sectors, both vertically and horizontally, to improve disaster risk governance. More details can be seen in Figure 6.



(Source: Processed Researchers Data (2021))

Figure 6. Actor Strengthening Policy for Tsunami Disaster Risk Governance in Padang City

Based on Figure 6 above, the policy design offered to stakeholders strengthens the involvement of all actors in reducing tsunami disaster risk in Padang City. There are several points of explanation from Figure 16 above: first, there is a need to develop procedures for

disseminating disaster information by accommodating the roles of the private sector and the community. This procedure is necessary because the dissemination of information can be faster by involving the community. So, that provides an effective response to disaster events quickly and measurably. The hope is to reduce the negative impact of the risk of a tsunami disaster if it occurs. The second is to formulate rules on task forces and the Disaster Governance Plan (*RPB*) to ensure that the *RPB* document becomes a mandatory basis for designing multi-sectoral development plans. This task force is assigned based on the Mayor's Decree and is tasked with assisting, monitoring, and evaluating the implementation of *RPB* in their respective agencies. Third, budgeting for communities involved in disaster risk management should be strengthened.

The mechanism for strengthening the budget, of course, comes from the initiative and support of the government together with the local legislature, which does have the function and authority in budgeting. In addition, it can also involve the private sector through corporate social responsibility funds to increase community capacity in disaster risk governance. The fourth is to form a cross-sectoral team to ensure supervision and control of tsunami risk governance. This cross-sectoral team was formed based on the Mayor's Decree to supervise and control the institution's compliance with existing regulations. A cross-sectoral team involving all representatives of living actors can accelerate the strengthening of tsunami risk governance, which can be completed in Padang City.

## **E. CONCLUSION**

The dimensions of actors in the governance of tsunami disaster risk reduction in Padang City are as follows: First, NGO/NGO descriptors are actors with the highest tendency to be involved. This conclusion was obtained because NGOs are the government's main partner in building disaster risk reduction capacity in Padang City. Second, local government descriptors tend to be involved in the second position of disaster management actors because it is indeed mandated by regulations as the leading sector in disaster management in the region, especially *BPBD* of Padang city. Third, local community descriptors become the third policy actor related to the tendency to reduce the tsunami disaster risk in Padang City through community empowerment and capacity-building programs. Fourth, descriptors of central/vertical government institutions become actors with the fourth trend of involvement in disaster risk reduction seen from the authority to design regulations and determine the budget. These actors use this great authority to develop rules for risk reduction, including the threat of a tsunami disaster. Fifth, community descriptors are in the fifth position regarding the tendency of involvement in disaster risk management policies. It is because there are no policies and programs designed to optimise the role of this digital community to be involved in efforts to reduce the risk of a tsunami disaster in Padang City. Sixth, private sector descriptors are actors with the lowest involvement tendency with the fifth position. This is due to the lack of policies and programs to increase the involvement of the private sector in tsunami disaster risk reduction in Padang City.

Strengthening actors in disaster risk governance begins with enhancing the involvement of the business sector, which has been felt to be very lacking. Furthermore, the role of the community needs to be increased because the use of information technology and the internet is a very effective and efficient medium in implementing disaster risk governance policies and programs. Vertical agencies/central government involvement needs to be improved, especially in budgeting, coordination, and supervision. Community participation can be increased by increasing capacity and engaging in disaster risk governance actions. In contrast, the recommendation for non-governmental organisation's (NGOs) involvement should be maintained and facilitated by designing regulations that enable the role of non-governmental organisations in reducing the risk of a tsunami disaster. For local governments, the involvement

is to strengthen capacity in budgeting for disaster risk governance, coordination, and synergy and build partnerships with various stakeholders in the role of a leading sector in disaster risk governance.

### **Acknowledgement**

The Research Team gives the highest appreciation and gratitude to the Research Center for Policy Governance Development and Empowerment LPPM Universitas Negeri Padang for conducting this research.

### **REFERENCES**

- Ainuddin, S., Aldrich, D. P., Routray, J. K., Ainuddin, S., & Achkazai, A. (2013). The Need for LOCAL Involvement: Decentralisation of Disaster Management Institutions in Baluchistan, Pakistan. *International Journal of Disaster Risk Reduction*, 6, 50–58. <https://doi.org/10.1016/j.ijdr.2013.04.001>
- Alam, E., & Ray-Bennett, N. S. (2021). Disaster Risk Governance for District-Level Landslide Risk Management in Bangladesh. *International Journal of Disaster Risk Reduction*, 59(2021), 1-13. <https://doi.org/10.1016/j.ijdr.2021.102220>
- Alexander, M., Priest, S., & Mees, H. (2016). A Framework for Evaluating Flood Risk Governance. *Environmental Science and Policy*, 64, 38–47. <https://doi.org/10.1016/j.envsci.2016.06.004>
- Alhadi, Z. (2014). Kesiapan Jalur dan Lokasi Evakuasi Publik Menghadapi Resiko Bencana Gempa dan Tsunami di Kota Padang (Studi Manajemen Bencana). *Humanus: Jurnal ilmiah Ilmu-ilmu Humaniora*, 13(1), 35-44. <https://doi.org/10.24036/jh.v13i1.4095>
- Alhadi, Z., Dt Maani, K., Nurhabibi, P., & Syarief, A. (2018). *An Analysis of Problem in Composing of Tsunami Contingency Plan in Padang City*. MATEC Web Conf. Volume 229, 2018. International Conference on Disaster Management (ICDM 2018). <https://doi.org/10.1051/mateconf/201822903007>
- Ardaya, A. Bustillos., Evers, M., & Ribbe, L. (2019). Participatory Approaches for Disaster Risk Governance? Exploring Participatory Mechanisms and Mapping to Close the Communication Gap Between Population Living in Flood Risk Areas and Authorities in Nova Friburgo Municipality, RJ, Brazil. *Land Use Policy*, 88(2019), 1-13. <https://doi.org/10.1016/j.landusepol.2019.104103>
- Artiningsih., Setyono, J. S., & Yuniartanti, R. K. (2016). The Challenges of Disaster Governance in an Indonesian Multi-hazards City: A Case of Semarang, Central Java. *Procedia - Social and Behavioral Sciences*, 227(2016), 347–353. <https://doi.org/10.1016/j.sbspro.2016.06.081>
- Bae, Y., Joo, Y. M., & Won, S. Y. (2016). Decentralisation and Collaborative Disaster Governance: Evidence from South Korea. *Habitat International*, 52(2016), 50–56. <https://doi.org/10.1016/j.habitatint.2015.08.027>
- Balian, E., Dewata, I., Umar, I., Muchtar, B., & Anwar, S. (2019). Disaster Mitigation of Mount Sinabung in Karo District, North Sumatera Province. *Geography and Geography Education*, 3(2), 196-201.
- Bandur, Agustinus. (2016). *Penelitian Kualitatif: Metodologi, Desain, dan Teknik Analisis Data dengan Nvivo 11 Plus*. Jakarta: Mitra Wacana Media.
- Bang, H. N. (2013). Governance of Disaster Risk Reduction in Cameroon: The Need to Empower Local Government. *Jàmbá: Journal of Disaster Risk Studies*, 5(2), 1-10.
- Daly, P., Ninglekhu, S., Hollenbach, P., Duyne Barenstein, J., & Nguyen, D. (2017). Situating Local Stakeholders within National Disaster Governance Structures: Rebuilding Urban

- Neighbourhoods Following the 2015 Nepal earthquake. *Environment and Urbanisation*, 29(2), 403–424. <https://doi.org/10.1177/0956247817721403>
- Djalante, Riyanti., Cameron Holley., Frank Thomalla., & Michelle Carnegie. (2013). Pathways for Adaptive and Integrated Disaster Resilience. *Natural Hazards*, 69(3), 2105–2135.
- Djalante, R., & Lassa, S. (2019). Governing Complexities and Its Implication on the Sendai Framework for Disaster Risk Reduction Priority 2 on Governance. *Progress in Disaster Science*, 2(2019), 1-5. <https://doi.org/10.1016/j.pdisas.2019.100010>
- Fischer, Frank., Douglas Togerson, Anna Durnova, & Michael Orsini. (2015). *Handbook of Critical Policy Studies*. Cheltenham: Edward Elgar Publishing.
- Forino, Giuseppe., Sara Bonati, & Lina Maria Calandra. (2021). *Governance of Risk, Hazards and Disasters Trends in Theory and Practice*. Abingdon: Routledge.
- Hemachandra, K., Amaratunga, D., & Haigh, R. (2020). Factors Affecting the Women's Empowerment in Disaster Risk Governance Structure in Sri Lanka. *International Journal of Disaster Risk Reduction*, 51(2020), 1-9. <https://doi.org/10.1016/j.ijdr.2020.101779>
- Hiwasaki, L., Luna, E., Syamsidik, & Shaw, R. (2014). Process for Integrating Local and Indigenous Knowledge with Science for Hydro-Meteorological Disaster Risk Reduction and Climate Change Adaptation in Coastal and Small Island Communities. *International Journal of Disaster Risk Reduction*, 10, 15–27. <https://doi.org/10.1016/j.ijdr.2014.07.007>
- IRGC. (2017). *Introduction to the IRGC Risk Governance Framework, Revised Version*. Lausanne: EPFL International Risk Governance Center.
- Jones, S., Manyena, B., & Walsh, S. (2015). Disaster Risk Governance: Evolution and Influences. In *Hazards, Risks and Disasters in Society* (pp. 45–61). Massachusetts: Academic Press. <https://doi.org/10.1016/B978-0-12-396451-9.00004-4>
- Madan, A., & Routray, J. K. (2015). Institutional Framework for Preparedness and Response of Disaster Management Institutions from National to Local Level in India with Focus on Delhi. *International Journal of Disaster Risk Reduction*, 14 (2015), 545–555. <https://doi.org/10.1016/j.ijdr.2015.10.004>
- Martin, J. D. (2018). *Indonesia Disaster Management Reference Handbook*. Hawaii: Center for Excellence in Disaster Management & Humanitarian Assistance.
- Miller, M. A., & Douglass, M. (2015). Disaster Governance in an Urbanising World Region. In *Disaster Governance in Urbanising Asia* (pp. 1–12). Singapore: Springer. [https://doi.org/10.1007/978-981-287-649-2\\_1](https://doi.org/10.1007/978-981-287-649-2_1)
- Mondal, D., Chowdhury, S., & Basu, D. (2018). Role of Panchayat (Local Self-Government) in Managing Disaster in Terms of Reconstruction, Crop Protection, Livestock Management and Health and Sanitation Measures. *Natural Hazards*, 94(1), 371–383. <https://doi.org/10.1007/s11069-018-3393-x>
- Ray-Bennett, N. S. (2018). Disasters, Deaths, and the Sendai Goal One: Lessons from Odisha, India. *World Development*, 103(2018), 27–39. <https://doi.org/10.1016/j.worlddev.2017.10.003>
- Renn, O. (2015). Stakeholder and Public Involvement in Risk Governance. *International Journal of Disaster Risk Science*, 6(1), 8–20. <https://doi.org/10.1007/s13753-015-0037-6>
- Sarosa, Samiaji. (2017). *Penelitian Kualitatif: Dasar-Dasar*. Jakarta: PT. Indeks.
- Seng, D. S. Chang. (2013). Tsunami Resilience: Multi-Level Institutional Arrangements, Architectures and System of Governance for Disaster Risk Preparedness in Indonesia. *Environmental Science and Policy*, 29 (2013), 57–70. <https://doi.org/10.1016/j.envsci.2012.12.009>
- Trias, A. P. L., & Cook, A. D. B. (2021). Future Directions in Disaster Governance: Insights from the 2018 Central Sulawesi Earthquake and Tsunami Response. *International*

- Journal of Disaster Risk Reduction*, 58(2021), 1-13. <https://doi.org/10.1016/j.ijdr.2021.102180>
- UNDP. (2013). *Issue Brief: Disaster Risk Governance*. New York: Bureau for Crisis Prevention and Recovery, UNDP.
- UNISDR (United Nations International Strategy for Disaster Reduction). (2015). *Sendai Framework for Disaster Risk Reduction 2015–2030*. Geneva: UNISDR
- UNOCHA. (2017). *Major Natural Hazards in Asia and the Pacific*. Retrieved from <https://reliefweb.int/map/world/major-natural-hazards-asia-and-pacific-0#:~:text=The%20Asia%2DPacific%20region%20is,millions%20of%20people%20every%20year>.
- Usón, T. J., Klonner, C., & Höfle, B. (2016). Using Participatory Geographic Approaches for Urban Flood Risk in Santiago de Chile: Insights from a Governance Analysis. *Environmental Science & Policy*, 66(2016), 62-72. <https://doi.org/10.1016/j.envsci.2016.08.002>
- Vij, S., Russell, C., Clark, J., Parajuli, B. P., Shakya, P., & Dewulf, A. (2020). Evolving Disaster Governance Paradigms in Nepal. *International Journal of Disaster Risk Reduction*, 50(2020), 1-8. <https://doi.org/10.1016/j.ijdr.2020.101911>

This page is left blank