



CENTRE FOR STRATEGIC AND INTERNATIONAL STUDIES

# RESEARCH & ACTIVITY REPORT ON STRENGTHENING DISASTER PREPAREDNESS IN INDONESIA

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# ABOUT

## ABOUT CSIS

Centre for Strategic and International Studies (CSIS) is an independent and non-profit think tank established since August 18, 1971. CSIS undertakes researches in economics, politics and social change, and international relations, with topics selected based on their relevance to public policy. CSIS has a longstanding commitment to public education through a variety of avenues, including an intensive seminar program, lectures and conferences, scientific products, and a bookstore. CSIS is a founding member of the ASEAN Institutes of Strategic and International Studies (ASEAN-ISIS) and until now still acting as its secretariat.

## ABOUT CSIS DISASTER RESEARCH UNIT

The idea of having a specific disaster research unit emerged several days after the Palu-Donggala catastrophic disasters back in September 2018. CSIS Executive Director Dr. Philips J. Vermonte subsequently deemed natural disasters a pressing matter for consideration by the institution as such catastrophes caused more victims than do conventional wars. In accordance with its founding values, CSIS feels responsible to share knowledge to strengthen disaster management in Indonesia. Under the direct supervision of Executive Director Vermonte, the previous research team on disaster preparedness is now developed into a research unit. Its activities focus as a convening platform to gather relevant insights from multiple actors, produce policy recommendation, and sustain public debates on disaster management.

## ACKNOWLEDGEMENTS

The report acknowledges substantive contributions from our donors, including PT. Astra International Tbk, Mayapada Group, and Sinar Mas Group. Without their support, this research might not take place since the beginning. The report also acknowledges strong supports from the CSIS Board of Trustees, Dr. Jusuf Wanandi and Dr. Clara Joewono; and substantive contributions from all speakers and participants invited, particularly Dr. Ir. Kuntoro Mangkusubroto who has been essential since the beginning.

### CSIS Indonesia

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# INTRODUCTION

Apart from being one of the most populous and largest countries in the world, Indonesia is geographically located in natural disaster-prone surroundings. There are three major active faults lie below the country, namely the Indo-Australian, the Eurasian, and the Pacific. Consequently, the Indonesia's National Disaster Management Authority (BNPB) reported that almost 7,000 villages/districts across Indonesia are at high-risk of severe earthquakes and more than 35,000 others are exposed to moderate risks. These numbers accumulatively composed half of the total existing villages/districts in 2018, as recorded by the Central Statistical Agency (BPS). Moreover, types of disaster in Indonesia are not merely limited to earthquakes. Geologically speaking, the country is also not immune to tsunamis, volcanic eruptions, liquefaction, and landslides. More than 100 million people are potentially exposed to direct impacts, including its potential losses worth as 266 trillion rupiah. In short, natural disasters present an imminent and severe threat to Indonesia

## 2018 was the momentum ...

Almost two decades after a Tsunami wiped out coastal regions along the Indian Ocean, Indonesia once again suffered from three large-scale disasters consecutively just within a year. West Nusa Tenggara, Central Sulawesi, Lampung, and Banten were devastated by various detrimental geological disasters. As mentioned by the BNPB, 5,846 people died because of those disasters. This number equals to 3,4% of the total dead bodies in the case of the 2004 Tsunami. Economic loss and damages from total three disasters were also noted around 38 trillion rupiah or accounted for more than 1% of the total state expenditure in 2018.

## The danger is even more concrete when discussing both the current and future capital city of Indonesia ...

Experts forecast both as likely to be a potential victim of 8-Richter scale mega-thrusts in each respective area. The two cities designated as the future capital are even on the list of top 250 Indonesia's cities and regions with the highest-disaster risks.

However, many strategic decision-makers in Indonesia still do not fully comprehend this. Officials believed that the location possesses minimum disaster risks despite the fact says the otherwise. Back in the 2018 Donggala large-scale earthquake, residents in the new Bornean capital city strongly felt the tremor; and it matches with the BNPB's calculation in 2014 that the area posits medium risk to earthquakes and exposed to a potential 2-metres high tsunami with estimated time arrival around 82 minutes. This situation paves the way for more policy-oriented studies on disasters complementing the existing theoretical and scientific researches. Yet, none plays that role in Indonesia up until today.

## Key Points:

- Natural disasters are inescapable due to Indonesia's geographical character & position.
- A significant rise of disaster events both quantitatively and qualitatively (types & scale).
- Economic losses are getting higher as disasters are getting frequent.
- Difficulties in comprehending technical terms for other sectors and public knowledge.



# WORKSHOPS

With support from our donors, CSIS has already organized five workshops around the theme of 'Strengthening National Disaster Preparedness' from December 2018 until September 2019. These workshops mainly aim to stock-take existing problems experienced by different stakeholders and also its feasible solutions. The workshops noted perspectives from various actors including scientists, government agencies, private sectors, NGOs, and international organizations.

# Workshop 1

Strengthening Natural Disaster Preparedness: Perspectives from Scientists

CSIS Pakarti Centre, 11 December 2018

## Key Takeaways

Despite the Act No. 24/2007 paving the way for a significant shift in Indonesia's disaster management paradigm, scientists agreed on the following as continuing obstacles:

- Limited funds available for disaster-related research
- Need for more science-based policies
- Absence of an integrated disaster data-sharing mechanism
- Lack of resilience and capacity at the local communities
- Poor use of the right technology



# Workshop 2

Strengthening Natural Disaster Preparedness: Perspectives from Gov. Agencies

CSIS Pakarti Centre, 29 January 2019

## Key Takeaways

Although the main focal point for dealing with disasters in Indonesia is the National Agency for Disaster Management (BNPB), many other government agencies also perform some relevant roles. Critical problems from their perspectives, including:

- Horizontal control-coordination among these agencies
- Poor early warning system, quantity, and quality.
- Lack of disaster-resilient infrastructure
- Prevalent crime rates before, during, and post-disaster
- Minimum budget for the preparedness



# Workshop 3

Strengthening Natural Disaster Preparedness: Perspectives from Business Sectors  
CSIS Pakarti Centre, 30 April 2019

## Key Takeaways

When disasters strike, business sectors are among the ones who suffer great economic losses, and yet still being burdened by the expectations of assisting the affected communities. Although this sector has better preparedness compare to the public one, some lingering problems continue including:

- Lack of PPP scheme and its legal umbrella
- Misleading CSR programs that focusing more on recovery
- Absence of comprehensive disaster-risk financing
- Poor disaster awareness, Business Continuity & Recovery Plan
- Missing public safety center, a one-door communication platform



# Workshop 4

Strengthening Natural Disaster Preparedness: Perspectives from Local Governments  
CSIS Pakarti Centre, 10 September 2019

## Key Takeaways

Despite the success stories of the Act No. 32/2004 which ensure everything is more sensitive towards local contexts, disaster management witnesses the otherwise. Here are some prominent problems during the discussion:

- Vertical command-control between NDMA and LDMA's
- Lack of commitment from political actors
- Limited quality of human resources and equipment
- Preparedness is not taken into local development plans
- Dependent communities and untapped local wisdom



# Workshop 5

Formulating Disaster Preparedness Framework: A Multi-Stakeholder Perspective

CSIS Pakarti Centre, 30 September 2019

## Key Takeaways

The final workshop aimed to present all findings from the previous sessions, to discuss the unsettling debates, and to discover any point that has not been brought up. Novel issues popped up including :

- Disaster is not yet seen as an urgent matter of national security
- No recovery strategy for the tourism sector in disaster-affected areas
- Overstretched fiscal capacity for disaster management
- Underutilized Big Data and Artificial Intelligence
- An unclear mechanism on the international assistance



## VIRTUES OF CSIS WORKSHOPS ON DISASTER PREPAREDNESS

*CSIS offers an innovative forum for discussions on disaster management in Indonesia by bringing together individuals from the public and private sectors, local representatives, NGOs, civil societies, and international organizations. It follows a policy-oriented path where the outcome would be translated into policy recommendations. It advances solutions not only from the technical side but also from the sociopolitical and socio-economic perspective.*



**Meeting with** Prof. Bambang Brodjonegoro, Minister of National Development Planning (2019-2024) on September 27, 2019.



**Meeting with** Lieutenant General (Retired) Agus Widjojo, Governor of the National Resilience Institute on January 30, 2020.

**Objective:**  
*to ensure our recommendations are directly received by the relevant policy makers*

## FORMAL HEARINGS




**Meeting with** Ir. B. Wlsnu Widjaja, Deputy for System & Strategy BNPB on October 8, 2019.

# POLICY RECOMMENDATIONS

Taking into account the ideas, concerns, and findings from the workshops, the CSIS Research Team has prepared a series of policy recommendation and has identified leading actors for each proposed recommendation.

## Political Commitment to Natural Disasters

National and regional leaders place minimum attention on disaster preparedness

-  **Mainstreaming** issues related to disasters in all political events and political actors
-  **Scheduling** capacity building programs on disaster-related issues among election candidates
-  **Integrating** disaster knowledge in the process of civil servant recruitment, pre-service education, and leadership courses
-  **Stipulating** 'vision on disaster preparedness' as another administrative requirement for the creation of a new political party
-  **Encouraging** the adoption of disaster preparedness as an annual agenda of the Association of local governments' meeting at all levels
-  **Formulating** a general guideline on the mandatory qualifications for leaders of the Local Disaster Management Authority, including providing relevant training courses for them

## Leading Actors



# Political Commitment to Natural Disasters

Insufficient Indonesia's Leadership on Disaster-Related Issues at the International Level

## Leading Actors



**Arranging** a regular dialogue mechanism involving the MOFA, technical ministries/agencies, and experts



**Creating** a systematic roadmap and the grand design of Indonesia's Disaster Diplomacy



**Establishing** a like-minded network between disaster-prone countries and generate more practical cooperation on disaster risk reduction



**Continuing** endeavors to mainstream disasters as a cross-pillar issue in ASEAN



**Strengthening** Indonesians' role in international disaster-related organizations such as the WMO, UNISDR, UNOCHA, IFRC, AHA Centre



**Increasing** numbers and roles of Indonesian think-tanks or disaster study center at the global level



**Identifying** Indonesian disaster-experts who are now working or residing abroad continuously



**Enhancing** substantive contributions to the regional disaster knowledge management agency



Credit: The Jakarta Post

# Political Commitment to Natural Disasters

Unclear Procedures on Handling Foreign Aids, Volunteers during Emergency and Recovery Period



**Establishing** a permanent cross-ministerial Standard Operating Procedure (SOP) on international aids and volunteers



**Identifying** a permanent focal point and procedural priorities from each ministry



**Advancing** the creation of one-stop service and information - hotlines on foreign and domestic aids and volunteers during the emergency period

## Leading Actors





# Institution and Governance on Disasters

## Overlapping regulations and legal instruments on disasters

### Leading Actors



**Appointing** an existing agency to be an integrated center connecting all documentation network and legal information (JDIHN) mainly on disasters from all government agencies.



**Ensuring** all existing legal instruments on disasters are accessible online and available in English as guidance for the international community



**Paying** more attention to punishment-and-rewards, gender-sensitive approach, disabled-friendly, local wisdom in the amendment of the Act No. 24/2007

# Institution and Governance on Disasters

## Relatively unclear and inaccurate early warning mechanism



**Adding** more disaster early warning and monitoring instruments in the Eastern part of Indonesia



**Reviewing** existing disaster-risk modelings of all relevant agencies continuously



**Developing** local wisdom and local practice-based early warning chain in each region



**Making** a stronger legally-binding instrument on the protection of all disaster early warning and monitoring equipment across Indonesia, as vital objects with tighter security measures



**Accelerating** the creation of an integrated national system on multi-hazards early warning system



**Supporting** technological advancement related to disaster early warning and monitoring system as an annual national priority, including the intensive proliferation of Artificial Intelligence and Big Data

### Leading Actors



## Institution and Governance on Disasters

Ignorance towards disaster-risk spatial planning in disaster-prone regions

- 🎯 **Providing** training on spatial management of disaster-prone area (KRB) including its related maps and its enforcements to the regional governments
- 🎯 **Carrying** in-depth systematic studies on the misuse of spatial planning according to all previous disaster events
- 🎯 **Re-zoning** or re-mapping potential disaster risk across Indonesia particularly in recently disaster-affected regions
- 🎯 **Tightening** standards for the issuance of spatial-use clearance particularly in disaster-prone regions, to also consider applying higher taxes in high-risk areas
- 🎯 **Reviewing** all regional development plans, particularly in disaster-prone regions

### Leading Actors



## Disaster Literacy

Poor understanding and awareness on disaster risks and how to mitigate it

### Leading Actors



- 🎯 **Creating** a new legal instrument on 'Eliminating Disaster Illiteracy' composes concerted efforts from all government agencies, including its national action plan, timelines, and responsible actors
- 🎯 **Implementing** disaster curriculum and day-to-day emergency care-related knowledge at all educational institutions systematically
- 🎯 **Encouraging** transportation and communication start-ups to provide training on emergency preparedness for their partners
- 🎯 **Improving** BPBD's role as a permanent center of disaster preparedness, response and recovery training for the society including volunteers, indigenous groups, religious figures
- 🎯 **Creating** a guideline on disaster knowledge for religious groups

- 
**Enhancing** practical cooperation with telecommunication provider to blast reminders for those who just arrive at the disaster-prone area
- 
**Translating** disaster-related knowledge into respective local languages and disabled-friendly symbols - Braille and Cued language
- 
**Establishing** museums or monuments in regions where large-scale disasters ever happened in the past to revitalize memories on disaster risk
- 
**Mainstreaming** disaster journalism including the creation of journalist forums for disaster issues
- 
**Intensifying** the role of police, military, coast guard, rescue personnel in promoting disaster preparedness
- 
**Evaluating** the progress of literacy and preparedness of disaster-resilient villages/ districts regularly
- 
**Fostering** a culture on disaster-ready certification for housings, industries, hospitals, hotels, restaurants, shopping malls; and their workers particularly in a disaster-prone area
- 
**Creating** a standard guideline to harmonize the existing occupational health and safety SOP in companies and professional association with disaster risk reduction principles
- 
**Conducting** capacity building programs on disaster preparedness, response, and recovery for relevant actors in tourism industries regularly
- 
**Encouraging** daily updates or forecast specifically related to disasters in all communication channels including television and radios



Credit: The Jakarta Post






Credit: The Jakarta Post



Credit: The Jakarta Post

## Disaster Literacy

Untapped, unexplored and unintegrated local wisdom and practices on disaster preparedness, response, recovery

-  **Collecting** information on local wisdom and practices related to disaster preparedness, response, and recovery in all regions
-  **Carrying** an intensive anthropological study on the cultural artifacts to identify disasters in the past
-  **Accelerating** the protection on the indigenous community through legal measures including protection of their wisdom in mitigating disasters

## Leading Actors



## Disaster Risk Financing Regime

Limited, unsustainable, and inflexible disaster risk financing



Credit: The Jakarta Post

## Leading Actors



-  **Increasing** the minimum standard gradually within national and local budget designated for disaster preparedness
-  **Allocating** a percentage of 'village funds' specifically for disaster risk reduction continuously
-  **Expediting** the fulfillment of the existing Road Map for Implementing Disaster Risk Insurance and Financing Strategies
-  **Tightening** the deadline on the creation of a public service agency for Disaster Pooling Fund
-  **Integrating** micro insurance catastrophe risk into regular taxes such as land and building tax
-  **Reviving** the Multi-Donor Trust Fund Initiative which focuses on Disaster Preparedness, engaging domestic and international donors, including its utilization scheme
-  **Increasing** policy dialogues between the Ministry of Finance, development agencies, banks and national universities
-  **Ensuring** the implementation of flexible financial regime customs during the emergency period



# Disaster Risk Financing Regime

Misleading private's role in disaster management and in dire need of public-private partnership

## Leading Actors



**Expediting** the adoption of a legal act on Corporate Social Responsibility which outlines disaster preparedness as one of its areas



**Issuing** a government regulation on general guidelines for areas of CSR and PPP focusing on disaster mitigation



**Formulating** an integrated map identifying potential loss due to disasters for industries and small-medium enterprises (SME) in disaster-prone areas



**Considering** the creation of the National Contingency Plan for private sectors with regards to the occurrence of disasters



**Providing** capacity building programs on disaster preparedness for SME in disaster-prone regions

# Disaster Risk Financing Regime

Poor investments on technological advancement, development and utilization for disaster management



**Providing** fiscal and non-fiscal incentives for technological investments and transfer-of-technology related to disaster management



**Advancing** economic diplomacy targeting developed states to seek collaboration in potential areas of high-technology for disasters, including bridging the communication between foreign companies and relevant agencies in Indonesia



**Maximizing** the use of big data and artificial intelligence to address the complexity of bureaucratic procedures on disaster management including at the analytical stage and early warning

## Leading Actors





## Resilient Infrastructure

Limited emergency shelters and safe evacuation routes

### Leading Actors



**Identifying** numbers of existing shelters including its positions, capacity, and its connecting routes in all regions across Indonesia



**Stipulating** an annual target on the development of shelters and public safety centers particularly in disaster-prone regions



**Issuing** a legally-binding regulation which obliges every educational institution to have an evacuation plan and a safe meeting point



**Intensifying** a national campaign on one safe room for one family



**Providing** a common national standard for disaster-resilient religious places and making a disaster-risk element as an administrative requirement for building a new religious place



**Imposing** higher taxes for public buildings which do not have a safe meeting point and shelter particularly in disaster-prone regions

## Resilient Infrastructure

Dependency on one single source for energy and telecommunication



**Encouraging** telecommunication providers, operators, and energy-related companies to diversify their infrastructure and to prepare disaster-risk modelings, contingency plan during an emergency period in disaster-prone regions



**Carrying** a simulation to test the operational back-up system for transportation, telecommunication, and energy sectors regularly



**Developing** alternative energy sources which still could be functional during an emergency period

### Leading Actors



## Disaster-related Research

Disconnection between scientists and policy-makers

-  **Formulating** a list of prioritized agenda on national disaster-related research and issuing a national roadmap on disaster-related research
-  **Providing** capacity building programs on the creation of strategic policy recommendation for scientists and experts in universities
-  **Strengthening** the national network between disaster-related study programs in universities
-  **Institutionalizing** Indonesian Disaster-related Experts' Registry (IDER) which currently managed by the IABI to be systematically integrated with the government's data
-  **Formalizing** dialogues between disaster-related experts and study centers of each relevant government agency

## Leading Actors








## Disaster-related research

Limited exploration, reviews, and updates on disaster data and maps

## Leading Actors



-  **Studying** the possibility of giving a special high-level award given by the president for parties who carried out innovations on disaster-related issues
-  **Simplifying** bureaucracy with regard to the international cooperation on disaster research
-  **Scheduling** a regular review on disaster maps, particularly those areas where recently suffered from disasters, including determining the expired period for those maps
-  **Designating** an existing agency to function as a knowledge management center of all lessons-learned from previous disaster events
-  **Intensifying** disaster research from social, economic, legal and cultural perspective

# Disaster-related research

Degeneration of disaster experts, in quantity and quality

## Leading Actors



**Considering** the creation of a special polytechnic on disaster management in disaster-prone regions



**Setting** the minimum target, timeline and roadmap of Indonesian disaster-experts' regeneration

# NUMBERS OF PARTICIPANTS

As mentioned earlier, each CSIS workshop was attended by participants from various backgrounds. Here is the total number at a glance

20

Prominent members of relevant government agencies at the national level

16

Leading scientists and technical experts from various regions across the country

12

Notable representatives from distinguished companies and professional associations

11

Envoys from civil societies and international organizations, NGOs

10

Strategic policy makers at the local level from six critical regions

# NAME OF PARTICIPANTS

CSIS was honored to welcome the presence and contribution of leading speakers and participants from various backgrounds to deliberate upon Indonesia's disaster management. The following list includes their names:



## SCIENTISTS

### 1. Dr. Surono

Volcanologist and former Head of the Indonesian Center for Volcanology and Geological Hazard Mitigation,

### 2. Prof. Kuntoro Mangkusubroto

Disaster management practitioner and the Director of the Rehabilitation and Reconstruction Executing Agency in Aceh and Nias

### 3. Dr. Asep Saepuloh

Remote Sensing Volcanologist - ITB

### 4. Dr. Eng. Hamzah Latief, M.Si.

Tsunami Expert - ITB

### 5. Dr. Eko Yulianto

Paleo Tsunami Expert - LIPI

### 6. Dr. Djati Mardiatno, M.Si

Head of Disaster Studies Center - UGM

### 7. Dr. Yonvitner, S.Pi., M.Si

Head of Disaster Studies Center - IPB

### 8. Dr. Abdul Hakam

Head of Disaster Studies Center - Andalas University

### 9. Ir. Kristianto, MSc.

Head of Centre for Volcanology - PVMBG ESDM

### 10. Said Faisal

Former Executive Director of AHA Centre

### 11. Alban Sciascia

Disaster management practitioner

### 12. Priliantina Bebasari, M.A.

Gender Expert

### 13. Dr. Ing. Widjo Kongko

Tsunami Expert - BPPT

### 14. Dr. Eng. Ir. Adi Maulana, S.T., M.Phil

Head of Disaster Studies Center - Hasanuddin University

### 15. Dr. Yohanes Karyadi

Head of Centre for Adaptation and Resilience Environmental Design Studies - Parahyangan University

### 16. dr. Mondastri Korib Sudaryo

Crisis management practitioner - UI

## GOVERNMENT AGENCIES



### 1. Dr. Lilik Kurniawan

Deputy for Mitigation and Preparedness BNPB

### 2. Dr. Velix Vernando Wanggai, SIP

Director for Disadvantaged regions, Transmigration, and Villages - BAPPENAS

### 3. Didi Hamzar, S.Sos., M.M.

Director for Preparedness BASARNAS

### 4. Air Vice Marshall M. Khairil Lubis

Vice Assistant of TNI Commander for Operational Matters

### 5. Police GC. Drs. Rusdi Hartono

Representative from Indonesia National Police for Operational Matters

### 6. Dr. Rokhis Khomarudin

Head of Remote Sensing Study Center - LAPAN

### 7. Dr. Udrekhan Hanif

Head of Div. of Technology for Disaster Mitigation BPPT

### 8. Ferrari Pinem, S.Si, M.Sc.

Head of Div. Disaster and Climate Changes Mapping - BIG

### 9. Dr. Daryono, S.Si, M.Si

Head of Div. Tsunami Early Warning and Earthquake Information - BMKG

### 10. Kristiyanto

Head of International Economic and Financial Cooperation - BKF Ministry of Finance

### 11. Hermawan Agustina, S.Kom, M.Si

Head of Div. Data, Data Center, Public Relations, BNPB

### 12. Suci Dewi Anugrah, S.Si., M.Si

Head of Sub-Div. for Earthquake Mitigation - BMKG

### 13. Erik Armundito, S.T., MT. PhD.

Head of Sub-Div. for Environmental Laws Enforcement - BAPPENAS

### 14. Dr. Abdul Muhari, S.Si, MT.

Head of Section - Climate Changes Adaptation - Ministry of Fisheries and Maritime Affairs

### 15. Theofransus Litaay, SH, LLM, PhD.

Senior Advisor - Presidential Staff Office

### 16. Santi H. Paramitha

Policy Advisor - Presidential Staff Office

### 17. Andriansyah

Head of Section Standardization Planning - BASARNAS

### 18. PGC Adjudant Johanes Bangun

Representative from INP for Operational Matters

### 19. Fajar Yulianto, S.Si, M.Si

Representative from Remote Sensing Study Center - LAPAN

### 20. Urip Setiyono, S.Si, MDM.

Representative from Earthquake and Tsunami Mitigation Division - BMKG



## BUSINESS SECTOR AND MEDIA

### 1. Wawandrijo Priwardono

Senior Vice President - Business Continuity Management PT. Bank Mandiri

### 2. Prof. Dr. dr. Aryono D. Puspongoro

Member of Expert Panel on Disaster Risk Reduction - Indonesian Hospitals Association

### 3. Dody A.S. Dalimunthe

Executive Director of Indonesian General Insurances' Association

### 4. Indra Nur Arfianto

Emergency Response Plan Manager PT. Garuda Indonesia

### 5. Bambang Mariono

Assistant Safety Manager PT. Unilever Indonesia

### 6. Wahyu Dhyatmika

Editor-in-Chief Tempo.co



**7. Dedy S. Halim**

Head of Security Division - PT. Astra International

**8. Levya A. Chaniago**

Analyst - PT. Astra International

**9. G. Sulistiyanto**

Managing Director - Sinarmas

**10. Rio Ekasaputra, MM, CGRP, QIA**

Head of Risk Management - Sinarmas Insurance

**11. Ikrar Nusantara**

Assistant Researcher - Sinarmas Agribusiness and Food Indonesia

**12. G.S. Ashok Kumar**

Indonesia Hotel and Restaurants Association Banten Province.

**1. H. Erman Rahman, S.E. M.Si.**

Head of BPBD West Sumatera Province

**2. Dr. Subejo**

Head of BPBD DKI Jakarta

**3. Sudaryanto**

Head of BPBD Central Java Province

**4. H. Ahsanul Khalik S.Sos, M.H.**

Head of BPBD West Nusa Tenggara Province

**5. Dr. Ir. Bunga Elim Somba, M.Sc.**

Representative of the Central Sulawesi Provincial Government

**6. I G.A. Teja Bhusana Yadnya, SSTP, M.Si.**

Head of Mitigation and Preparedness BPBD Bali Province

**7. Tri Indrawan**

Secretary of BPBD DKI Jakarta

**8. Najib**

Secretary of BPBD West Nusa Tenggara Province

**9. Joko Indro Martono, S.H., M.M.**

Head of Mitigation and Preparedness BPBD DKI Jakarta

**10. Basuki Rahmat, S.Sos, M.Si**

Head of Section - People Empowerment and Institutions BPBD DKI Jakarta



**LOCAL GOVERNMENTS**



**CIVIL SOCIETY & INTERNATIONAL ORGANIZATION**

**1. Dipo D. Suma**

Knowledge and Change Management Officer  
AHA Centre

**2. Mia Marina**

International Development and Humanitarian  
Assistance WFP

**3. Herry Firmansyah**

Disaster Risk Reduction Manager - Indonesian  
Red Cross

**4. Aaron Holmes**

Head of Emergency Preparedness and Response  
Unit WFP

**5. Ikhsanuddin**

Logistics Officer WFP

**6. Daniel von Rege**

Country Director - MSF Indonesia

**7. Sri Atmaja P. Rosyidi**

Representative of the Muhammadiyah Disaster  
Management Center

**8. Cici Riesmasari**

Communication Officer - MSF Indonesia

**9. Dandi Prasetya**

Head of Indonesian Community for Disaster  
Management (MPBI)

**10. Nofri Yohan Raco**

Advocacy Officer WWI

**11. Agung Gunansyah**

Program Manager WWI



# A WAY FORWARD

After successfully organizing five series of workshops, CSIS Indonesia is committed to continuing its contribution to the development of disaster management in Indonesia.

CSIS would develop the previous research team into a center of excellence for policy-oriented research and dialogues on disaster preparedness, response, and recovery in Indonesia. In the next five years, this unit hopefully would be recognized as one of the prominent references on the field both from national and international audiences. This unit is expected could assist the Indonesian government in achieving a disaster-resilient ASEAN Community by 2025.

**Scope of activities** of this unit including extensive research on natural disasters, climate change, and man-made disasters (such as social and religious conflicts

- **Substance:** organizing thematic FGDs or public lectures, publishing analyses on disaster-related issues in the form of op-eds, conducting data collection
- **Network:** hearings with relevant government agencies, conducting study visit to regions, strengthening communication with experts, enhancing interactions with the business sector and non-governmental organizations,
- **Organizational and Human Resources** strengthening internal database, and enhancing expertise of DRR Unit human resources.

**This research unit welcomes any partnership or support from any domestic and international partners.**

# PROFILE OF THE AUTHORS

## PHILIPS J. VERMONTE

### Executive Director of CSIS

Philips J. Vermonte joined CSIS in 2001. He received his Master of Arts degree in international studies from Department of Politics, the University of Adelaide, Australia, in 2001, funded by the AusAID scholarship. He obtained his Ph.D in Political Science at Northern Illinois University, Dekalb, USA in 2012. He is one of the founding members of the policy research network (ProREP). He is one of the expert respondents (narasumber ahli) of Metro TV and actively contributes to the Jakarta Post and Tempo Magazine. His research interests including political parties, election, decentralization, and Indonesian domestic politics.

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## M. HABIB ABIYAN DZAKWAN

### Disaster Management Research Unit

Prior to joining the Disaster Management Research Unit, M. Habib has served the CSIS Department of International Relations since mid-2018. He previously covered areas namely maritime affairs, women peace and security, Indonesia's foreign policy and ASEAN. With regards to his track record on disaster management, he managed to attend numerous capacity building programs organized by relevant domestic and international agencies. He was also a voluntary teacher for English and disaster preparedness in prone areas outside the capital.

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## POLICY RECOMMENDATION

Bearing in mind six mentioned problems, the CSIS Research Team on National Disaster Preparedness formulated some policy recommendations based on findings and suggestions from various stakeholders who attended five series of CSIS focus group discussions. These recommendations also identified actors and relevant legislations regarding the proposed solutions. However, the following list might continue as there are a lot of intersecting responsibilities and overlapping legislation related to disasters.

No.	Issues	Problems	Policy Recommendations	Actors Involved	Legislations
1.	Political commitment on disaster-related issues	National and regional leaders put minimum attention on disaster preparedness	<ul style="list-style-type: none"> <li>Mainstreaming issues related to disasters in all political events in Indonesia, including the national and local elections, and also to political actors such as political parties who have not considered disaster preparedness as political agenda and policies.</li> <li>Scheduling capacity building programs on disaster-related issues among candidates during the election period.</li> <li>Integrating disaster knowledge in the process of recruiting civil servants, pre-service education, and leadership courses organized by state agencies</li> <li>Stipulating ‘vision on disaster preparedness’ as another administrative prerequisite for the creation of a new political party.</li> </ul>	<ul style="list-style-type: none"> <li>National Development Planning Agency (BAPPENAS)</li> <li>National Disaster Management Authority (BNPB)</li> <li>Ministry of Interior (KEMENDAGRI)</li> <li>General Elections Commission (KPU)</li> <li>Ministry of Laws and Human Rights (KEMENKUMHAM)</li> <li>Ministry of State Apparatus Empowerment and Bureaucratic Reforms (KEMENPANRB)</li> <li>Ministry of Manpower (KEMENAKER)</li> <li>Ministry of Communication and Information (KEMENKOMINFO)</li> </ul>	<ul style="list-style-type: none"> <li>Act No. 10/2016</li> <li>Act No. 7/2017</li> <li>Act No. 2/2011</li> <li>Act No. 5/2014</li> <li>Government Regulation No. 101/2000</li> <li>Government Regulation No. 63/2009</li> <li>Government Regulation No. 11/2017</li> <li>Government Regulation No. 49/2018</li> <li>Presidential Regulation No. 98/2016</li> <li>Presidential Regulation No. 58/2013</li> <li>Ministerial Regulation, Ministry of Interior No. 108/ 2017</li> <li>Ministerial Regulation, Ministry of Laws and</li> </ul>



			<ul style="list-style-type: none"> <li>• Encouraging the adoption of ‘disaster preparedness’ as an annual agenda of the association of local governments at all levels — provincial, cities, regencies, villages.</li> <li>• Stipulating a general guideline on the mandatory qualifications for leaders of the local disaster management authority.</li> </ul>	<ul style="list-style-type: none"> <li>• National Resilience Institute (LEMHANNAS)</li> <li>• National Civil Service Agency (BKN)</li> <li>• National Institute of Public Administration (LAN)</li> <li>• Political Parties</li> </ul>	<p>Human Rights Regulation No. 34/2017</p> <ul style="list-style-type: none"> <li>• Ministerial Regulation, Ministry of State Apparatus Empowerment and Bureaucratic Reforms No. 41/2018</li> <li>• National Civil Service Agency Regulation No. 14/2018</li> <li>• National Institute of Public Administration Regulation No. 12/2018</li> </ul>
		Insufficient Indonesia’s leadership on disaster-related issues at the international level	<ul style="list-style-type: none"> <li>• Forming a regular dialogue mechanism cross-ministerial/agencies between the Ministry of Foreign Affairs, technical ministries, and related experts</li> <li>• Creating a systematic blueprint, roadmap, and timeline - the Grand Design of Indonesia’s Disaster Diplomacy</li> <li>• Establishing a like-minded network between disaster-prone countries and generate more related practical cooperation, particularly on disaster risk reduction.</li> </ul>	<ul style="list-style-type: none"> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• Ministry of Foreign Affairs (KEMLU)</li> <li>• Ministry of Research, Technology and Higher Education (MENRISTEKDIKTI)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 37/1999</li> <li>• Act No. 39/2004</li> <li>• Government Regulation No. 41/2006</li> <li>• Government Regulation No. 32/2008</li> <li>• Government Regulation No. 48/2018</li> <li>• Presidential Regulation No. 96/2012</li> <li>• Ministerial Regulation, Ministry of Foreign Affairs Regulation No. 4/2008</li> <li>• Ministerial Regulation, Ministry of Interior No. 38/2008</li> </ul>



			<ul style="list-style-type: none"> <li>• Continuing endeavors to mainstream disasters as an ASEAN cross-pillars issue</li> <li>• Strengthening Indonesians' role in international disaster-related organizations such as the WMO, UNISDR, IFRC, AHA Centre and sparing efforts to ensure Indonesians hold strategic positions of those organizations</li> <li>• Increasing numbers and roles of Indonesian think-tanks or study centers at the global level including the Global Alliance of Disaster Research Institute</li> <li>• Identifying Indonesian disaster-experts which are now working or residing abroad continuously.</li> <li>• Ensuring the protection of Indonesian citizens, both those who are working voluntarily or designated to work in disaster-prone foreign countries.</li> <li>• Promoting the role of AHA Centre as an ASEAN agency specifically focuses on disasters to carry disaster diplomacy outside the region</li> </ul>	<ul style="list-style-type: none"> <li>• National Search and Rescue Agency (BASARNAS)</li> <li>• National Institute of Aeronautics and Space (LAPAN)</li> <li>• Agency for the Assessment and Application of Technology (BPPT)</li> <li>• Geospatial Information Agency (BIG)</li> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian National Police (POLRI)</li> <li>• Indonesian Institute of Sciences (LIPI)</li> <li>• AHA Centre</li> </ul>	<ul style="list-style-type: none"> <li>• Ministerial Regulation, Ministry of Interior No. 15/2009</li> </ul>
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		Unclear mechanism on foreign aids and foreign volunteers during emergency and recovery period	<ul style="list-style-type: none"> <li>• Establishing a fixed cross-ministerial standard operating procedure (SOP) with regard to the foreign aids and foreign volunteers during an emergency period.</li> <li>• Stipulating a permanent focal point in each respective relevant ministry/agency with regard to the foreign aids and foreign volunteers during an emergency period.</li> <li>• Establishing one-stop service and information on foreign and domestic aids and volunteers during an emergency period.</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Finance (KEMENKEU)</li> <li>• Ministry of Laws and Human Rights (KEMENKUMHAM)</li> <li>• Ministry of Foreign Affairs (KEMLU)</li> <li>• Ministry of Social Affairs (KEMSOS)</li> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian National Police (POLRI)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Port and Airport Authority</li> <li>• Indonesian Red Cross (PMI)</li> <li>• AHA Centre</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 24/2007</li> <li>• Government Regulation No. 23/2008</li> <li>• Government Regulation No. 32/2008</li> <li>• Presidential Regulation No. 96/2012</li> <li>• Presidential Regulation No. 17/2018</li> <li>• Ministerial Regulation, Ministry of Defense Regulation No. 11/2019</li> <li>• Ministerial Regulation, Ministry of Interior No. 38/2008</li> <li>• Ministerial Regulation, Ministry of Social Affairs No. 1/2013</li> <li>• Head of BNPB Regulation No. 17/2011</li> <li>• Head of BNPB Regulation No. 6/2018</li> </ul>
2.	Institution and Governance on Natural Disasters	Unsystematic format of relations between national and regional authorities	<ul style="list-style-type: none"> <li>• Ensuring the creation of Disaster Risk Reduction Forum in all regions of Indonesia, and its sustainability</li> <li>• Considering the establishment of hotlines between the Local Disaster Management Authority (BPBD) and</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• Ministry of Village, Development of Disadvantaged Regions (KEMENDES PDRT)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 24/2007</li> <li>• Act No. 32/2004</li> <li>• Act No. 23/2014</li> <li>• Act No. 39/2008</li> <li>• Government Regulation No. 21/2008</li> <li>• Government Regulation No. 38/2007</li> </ul>





			<p>National Disaster Management Authority (BNPB)</p> <ul style="list-style-type: none"> <li>• Advancing study on the effective command and control between national and local disaster management authority, including a comparative study to the TNI, BASARNAS, and POLRI models</li> <li>• Enhancing the capacity of local disaster management authority and adding more sustainable programs on disaster preparedness in disadvantaged regions and outer territories</li> <li>• Improving the bureaucratic position of BNPB into a state ministry.</li> </ul>	<ul style="list-style-type: none"> <li>• National Disaster Management Authority (NDMA)</li> <li>• Local Disaster Management Authority (BPBD)</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 7/2008</li> <li>• Presidential Regulation No. 12/2015</li> <li>• Presidential Regulation No. 17/2018</li> <li>• Ministerial Regulation, Ministry of Interior No. 46/2008</li> <li>• Ministerial Regulation, Ministry of Interior No. 101/2018</li> <li>• Ministerial Regulation, Ministry of Village, Development Disadvantaged Regions No. 6/2015</li> <li>• Head of BNPB Regulation No. 3/2016</li> <li>• Head of BNPB Regulation No. 3/2012</li> <li>• Head of BNPB Regulation No. 10/2008</li> </ul>
		<p>Absence of horizontal control between relevant stakeholders during preparedness and emergency period</p>	<ul style="list-style-type: none"> <li>• Carrying a cross-ministerial and public-private disaster risk simulation at the national and local levels.</li> <li>• Establishing one single call center for a national and local emergency which consists of various relevant ministries including preparing its supporting infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Transportation (KEMHUB)</li> <li>• Ministry of Fisheries and Maritime Affairs (KEMENKKP)</li> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• Ministry of Health (KEMENKES)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 3/2002</li> <li>• Act No. 24/2007</li> <li>• Act No. 34/2004</li> <li>• Act No. 11/2009</li> <li>• Act No. 29/2014</li> <li>• Government Regulation No. 21/2008</li> <li>• Government Regulation No. 2/2018</li> </ul>



			<ul style="list-style-type: none"> <li>• Stipulating one single platform for disaster risks data collection and sharing across various ministries, including harmonizing various existing disaster online applications and one general standard guidelines for disaster map</li> <li>• Advancing the national civil-military coordination mechanism in mobilizing logistics during an emergency period.</li> <li>• Forming bilateral policy consultations — dialogues between the National Disaster Management Authority (BNPB) and all ministries who have deployable assets during an emergency period.</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Social Affairs (KEMENSOS)</li> <li>• Ministry of Communication and Information (KEMENKOMINFO)</li> <li>• Ministry of Defense (KEMHAN)</li> <li>• Ministry of Energy and Mineral Resources (KEMENESDM)</li> <li>• Ministry of Environment and Forestry (KEMENLHK)</li> <li>• Ministry of State-Owned Enterprises (KEMENBUMN)</li> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian National Police (POLRI)</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 36/2006</li> <li>• Presidential Regulation No. 39/2019</li> <li>• Presidential Regulation No. 9/2016</li> <li>• Presidential Regulation No. 83/2016</li> <li>• Presidential Regulation No. 27/2014</li> <li>• Presidential Regulation No. 178/2014</li> <li>• Ministerial Regulation, Ministry of Transportation Regulation No. 64/2005</li> <li>• Ministerial Regulation, Ministry of Transportation Regulation No. 112/2017</li> <li>• Ministerial Regulation, Ministry of Transportation Regulation No. 873/2017</li> <li>• Ministerial Regulation, Ministry of State-Owned Enterprises Regulation No. 2/2017</li> <li>• Ministerial Regulation, Ministry of State-</li> </ul>
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				<ul style="list-style-type: none"> <li>• Indonesian Search and Rescue Agency (BASARNAS)</li> <li>• Indonesian Maritime Security Agency (BAKAMLA)</li> <li>• Indonesian Geospatial Agency (BIG)</li> <li>• Firefighter Units</li> <li>• Indonesian Hospital Association</li> </ul>	<p>Owned Enterprises Regulation No. 2/2018</p> <ul style="list-style-type: none"> <li>• Ministerial Regulation, Ministry of Environment and Forestry Regulation No. 80/2016</li> <li>• Ministerial Regulation, Ministry of Fisheries and Maritime Affairs Regulation No. 6/2017</li> <li>• Ministerial Regulation, Ministry of Fisheries and Maritime Affairs Regulation No. 15/2018</li> <li>• Ministerial Regulation, Ministry of Health Regulation No. 19/2016</li> <li>• Ministerial Regulation, Ministry of Health Regulation No. 145/2007</li> <li>• Ministerial Regulation, Ministry of Social Affairs Regulation No. 26/2015</li> <li>• Ministerial Regulation, Ministry of Information and Communication No. 10/2016</li> <li>• Ministerial Regulation, Ministry of Defense Regulation No. 3/2009</li> </ul>
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					<ul style="list-style-type: none"><li>• Ministerial Regulation, Ministry of Defense Regulation No. 6/2015</li><li>• Ministerial Regulation, Ministry of Defense Regulation No. 9/2011</li><li>• Ministerial Regulation, Ministry of Defense Regulation No. 35/2011</li><li>• Ministerial Regulation, Ministry of Defense Regulation No. 29/2014</li><li>• Ministerial Regulation, Ministry of Defense Regulation No. 58/2014</li><li>• Ministerial Regulation, Ministry of Defense Regulation No. 39/2014</li><li>• Ministerial Regulation, Ministry of Energy and Mineral Resource Regulation No. 15/2011</li><li>• Ministerial Regulation, Ministry of Interior No. 122/2018</li><li>• Head of BMKG Regulation No. 20/2014</li></ul>
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					<ul style="list-style-type: none"> <li>• Head of POLRI Regulation No. 3/2015</li> <li>• Head of POLRI Regulation No. 25/2011</li> <li>• Head of POLRI Regulation No. 17/2009</li> <li>• Head of BNPB Regulation No. 3/2016</li> <li>• Head of BNPB Regulation No. 7/2012</li> <li>• Head of BNPB Regulation No. 8/2011</li> <li>• Head of BIG Decision No. 54/2015</li> <li>• Head of BIG Regulation No. 8/2015</li> <li>• Head of BIG Decision No. 27/2013</li> </ul>
		Overlapping Regulations and Legal Instruments related to Disasters	<ul style="list-style-type: none"> <li>• Appointing an existing agency to be an integrated center connecting all documentation network and legal information (JDIHN) specifically related to disaster both from all ministries, agencies and regional governments</li> <li>• Ensuring all existing regulations and legal instruments related to disaster are accessible online and available in the English version</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Laws and Human Rights (KEMENKUMHAM) — National Law Development Agency (BPHN)</li> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• National Disaster Management Authority (BNPB)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 12/2011</li> <li>• Act No. 24/2007</li> <li>• Presidential Regulation No. 33/2012</li> <li>• Ministerial Regulation, Ministry of Laws and Human Rights Regulation No. 8/2019</li> <li>• Ministerial Regulation, Ministry of Interior Regulation No. 120/2018</li> </ul>



			<p>as guidance for the international community</p> <ul style="list-style-type: none"> <li>Ensuring the amendment of Act on Disaster Management has considered all other existing regulations related to disasters, including paying more attention to ‘punishment-and-rewards’ approach, gender-sensitive, disable friendly, local wisdom.</li> </ul>		
	Relatively unclear and inaccurate early warning mechanism	<ul style="list-style-type: none"> <li>Adding more disaster early warning and monitoring instruments in the eastern part of Indonesia</li> <li>Reviewing existing disaster-risk modeling of all relevant agencies continuously</li> <li>Developing local wisdom and local practice-based early warning chain in each region</li> <li>Making a stronger legally-binding instrument on the protection of all disaster early warning and monitoring equipment across Indonesia as vital objects with tighter security measures.</li> <li>Accelerating the creation of an integrated national system on multi-hazards early warning system</li> </ul>	<ul style="list-style-type: none"> <li>Coordinating Ministry for Human Development and Culture (KEMENKOPMK)</li> <li>Ministry of Communication and Information (KEMENKOMINFO)</li> <li>Ministry of Energy and Mineral Resources (KEMENESDM)</li> <li>Ministry of Villages, Development of Disadvantaged Regions (KEMENDES PDRT)</li> <li>Meteorology, Climatology, and Geophysical Agency (BMKG)</li> </ul>	<ul style="list-style-type: none"> <li>Act No. 24/2007</li> <li>Act No. 31/2009</li> <li>Government Regulation No. 21/2008</li> <li>Government Regulation No. 11/2016</li> <li>Presidential Regulation No. 178/2014</li> <li>Ministerial Regulation, Ministry of Communication and Information Regulation No. 3/2014</li> <li>Ministerial Regulation, Ministry of Communication and Information Regulation No. 20/2006</li> <li>Ministerial Regulation, Ministry of Communication and</li> </ul>	



			<ul style="list-style-type: none"> <li>• Making technological advancement related to disaster early warning and monitoring system as an annual national priority</li> </ul>	<ul style="list-style-type: none"> <li>• National Disaster Management Authority (BNPB)</li> <li>• Indonesian National Police (TNI)</li> <li>• Indonesian National Armed Forces (POLRI)</li> <li>• Agency for the Assessment and Application of Technology (BPPT)</li> <li>• Indonesian Aeronautics and Space Agency (LAPAN)</li> <li>• Indonesian Institute of Sciences (LIPI)</li> <li>• Internet and Telecommunication Provider and Operators</li> </ul>	<p>Information Regulation No. 2/2016</p> <ul style="list-style-type: none"> <li>• Head of POLRI Regulation No. 13/2017</li> <li>• Head of BMKG Regulation No. 9/2010</li> <li>• Head of BNPB Regulation No. 6/2013</li> </ul>
		Ignorance towards disaster-risk spatial planning in disaster-prone regions	<ul style="list-style-type: none"> <li>• Providing training on spatial management of 'disaster-prone area (KRB)' including its related maps to the regional governments and law enforcement particularly in disaster-prone regions</li> <li>• Carrying in-depth systematic research on the misuse of spatial planning according to all previous disaster events</li> <li>• Re-zoning or re-mapping potential disaster risks across</li> </ul>	<ul style="list-style-type: none"> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• Ministry of land and spatial planning (KEMENATR)</li> <li>• Ministry of Fisheries and Maritime Affairs (KEMENKP)</li> <li>• Ministry of Finance (KEMENKEU)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 26/2007</li> <li>• Act No. 32/2014</li> <li>• Act No. 27/2007</li> <li>• Government Regulation No. 69/1996</li> <li>• Government Regulation No. 16/2004</li> <li>• Government Regulation No. 21/2008</li> </ul>



			<p>Indonesia, particularly in recently disaster-affected regions</p> <ul style="list-style-type: none"> <li>• Strengthening the issuance of spatial-use clearance particularly in disaster-prone regions, including applying higher taxes for areas with the highest risks</li> <li>• Reviewing all regional development plans, particularly in disaster-prone regions</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Environment and Forestry (KEMENLHK)</li> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• Ministry of Public Housing and Public Works (KEMENPUPR)</li> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian Police (POLRI – POLDA)</li> <li>• National Disaster Management Authority (BNPB)</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 26/2008</li> <li>• Government Regulation No. 15/2010</li> <li>• Government Regulation No. 64/2010</li> <li>• Government Regulation No. 38/2011</li> <li>• Presidential Regulation No. 16/2015</li> <li>• Ministerial Regulation, Ministry of land and spatial planning Regulation No. 1/2018</li> <li>• Ministerial Regulation, Ministry of Public Housing and Public Works No. 15/2009</li> <li>• Ministerial Regulation, Ministry of Interior Regulation No. 86/2017</li> <li>• Ministerial Regulation, Ministry of Fisheries and Maritime Affairs Regulation No. 24/2019</li> <li>• Ministerial Regulation, Ministry of Energy and Mineral Resources</li> </ul>
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					Regulation 11/2016	No.
3.	Disaster Literacy	Lack of understanding and awareness on disaster risks and how to mitigate it	<ul style="list-style-type: none"> <li>• Creating a new legal instrument on ‘Eliminating Disaster Illiteracy’ which composed of concerted efforts from all ministries/agencies, including its national action plan, timelines, and identifying responsible actors for the implementation.</li> <li>• Implementing a disaster curriculum and day-to-day emergency care-related knowledge at all educational institutions systematically, including the creation of disaster management study program in universities located in disaster-prone regions</li> <li>• Encouraging transportation and communication startups to provide training on emergency preparedness for their partners, particularly those in disaster-prone regions</li> <li>• Improving Regional Disaster Management Authority’s role in each respective region as a permanent center of disaster preparedness, response, and recovery training for society</li> </ul>	<ul style="list-style-type: none"> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• Ministry of Education and Culture (KEMENDIKBUD)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> <li>• Ministry of Manpower (KEMENAKER)</li> <li>• Ministry of Communication, and Information (KEMENKOMINFO)</li> <li>• Ministry of Social Affairs (KEMENSOS)</li> <li>• Ministry of Religious Affairs (KEMENAG)</li> <li>• Ministry of Tourism (KEMENPAR)</li> <li>• Ministry of Industry (KEMENPERIN)</li> <li>• Ministry of Agriculture (KEMENTAN)</li> <li>• National Disaster Management Authority (BNPB)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 1/1970</li> <li>• Act No. 36/1999</li> <li>• Act No. 40/1999</li> <li>• Act No. 2/2002</li> <li>• Act No. 13/2003</li> <li>• Act No. 20/2003</li> <li>• Act No. 34/2004</li> <li>• Act No. 24/2007</li> <li>• Act No. 11/2008</li> <li>• Act No. 10/2009</li> <li>• Act No. 44/2009</li> <li>• Act No. 11/2010</li> <li>• Act No. 3/2014</li> <li>• Act No. 20/2014</li> <li>• Act No. 29/2014</li> <li>• Act No. 8/2016</li> <li>• Act No. 1/2018</li> <li>• Act No. 18/2019</li> <li>• Government Regulation 21/2008</li> <li>• Government Regulation 17/2010</li> <li>• Government Regulation 50/2012</li> <li>• Government Regulation 52/2012</li> </ul>	<p>No.</p> <p>No.</p> <p>No.</p> <p>No.</p>



			<p>including volunteers, leaders of indigenous groups, religious figures, and also creating a guideline on disaster knowledge for religious groups.</p> <ul style="list-style-type: none"> <li>• Enhancing practical cooperation with telecommunication providers to blast reminder information for those who arrive at disaster-prone regions.</li> <li>• Translating disaster-related knowledge into respective local languages and disabled-friendly symbols — braille or cued language</li> <li>• Establishing museums or monuments in regions where large-scale disasters ever happened in the past to revitalize memories regarding disaster risk in those particular regions.</li> <li>• Mainstreaming disaster journalism including the creation of journalist forums for disaster issues in all regions, including providing capacity building for the leader of mass media groups</li> <li>• Intensifying the role of TNI/POLRI/BASARNAS</li> </ul>	<ul style="list-style-type: none"> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian National Police (POLRI)</li> <li>• Indonesian Search and Rescue Agency (BASARNAS)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> <li>• National Standardization Agency (BSN)</li> <li>• Indonesian Red Cross Society (PMI)</li> <li>• Indonesian Broadcasting Commissions (KPI)</li> <li>• Telecommunication and Transportation Startups</li> <li>• Non-Governmental Organizations and Civil Society</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 66/2015</li> <li>• Government Regulation No. 107/2015</li> <li>• Government Regulation No. 29/2018</li> <li>• Government Regulation No. 7/2019</li> <li>• Ministerial Regulation, Ministry of Agriculture No. 50/2007</li> <li>• Ministerial Regulation, Ministry of Social Affairs Regulation No. 128/2011</li> <li>• Ministerial Regulation, Ministry of Social Affairs Regulation No. 28/2012</li> <li>• Ministerial Regulation, Ministry of Social Affairs Regulation No. 29/2012</li> <li>• Ministerial Regulation, Ministry of Industry No. 40/2016</li> <li>• Ministerial Regulation, Ministry of Education and Culture No. 46/2014</li> </ul>
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			<p>personnel in raising awareness on disaster preparedness</p> <ul style="list-style-type: none"> <li>• Evaluating the progress of literacy and preparedness of villages/districts continuously</li> <li>• Fostering a culture on ‘disaster-ready’ certification for housing complex, industries, hospitals, hotels, restaurants, and shopping malls and their workers particularly those located in disaster-prone regions</li> <li>• Creating a standard guideline to synergize between the existing K3 Security SOP in companies and professional association with disaster-risk reduction principles.</li> <li>• Regularly conducting capacity-building programs on disaster preparedness, response, and recovery for relevant actors in tourism industries including hotels, restaurants, and shopping malls</li> <li>• Encouraging daily updates or forecast specifically related to disasters in all communication channels including televisions and radios</li> </ul>		<ul style="list-style-type: none"> <li>• Ministry of Education and Culture Decision No. 40/2017</li> <li>• Ministerial Regulation, Ministry of Research, Technology and Higher Education No. 46/2017</li> <li>• Ministerial Regulation, Ministry of Health No. 4/2018</li> <li>• Ministerial Regulation, Ministry of Industry No. 41/2017</li> <li>• Ministerial Regulation, Ministry of Communication and Information Regulation No. 2/2016</li> <li>• Ministerial Regulation, Ministry of Tourism and Creative Economy No. 7/2014</li> <li>• Ministerial Regulation, Ministry of Tourism Regulation No. 10/2018</li> <li>• Ministerial Regulation, Ministry of Tourism Regulation No. 10/2019</li> <li>• Ministerial Regulation, Ministry of Defense No 3/2009</li> </ul>
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					<ul style="list-style-type: none"> <li>• Ministerial Regulation, Ministry of Defense No. 9/2011</li> <li>• Ministerial Regulation, Ministry of Defense Regulation No. 4/2012</li> <li>• Ministerial Regulation, Ministry of Defense Regulation No. 6/2015</li> <li>• Head of POLRI Regulation No. 17/2009</li> <li>• Head of BASARNAS Regulation No. 1/2019</li> <li>• Head of BNPB Regulation No. 17/2011</li> <li>• Head of BNPB Regulation No. 1/2012</li> <li>• Head of BNPB Regulation No. 4/2012</li> <li>• Head of BNPB Regulation No. 4/2016</li> </ul>
		Untapped, unexplored, and unintegrated local wisdoms and local practices on disaster preparedness, response, recovery	<ul style="list-style-type: none"> <li>• Collecting information on local wisdom and practices related to disaster preparedness, response, and recovery in every region across Indonesia</li> <li>• Carrying an intensive study on the cultural artifacts to identify disaster events in the past</li> <li>• Accelerating the protection on the indigenous community</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• Ministry of Environment and Forestry (KEMENLHK)</li> <li>• Ministry of Education and Culture (KEMENDIKBUD)</li> <li>• Ministry of Villages, Development of</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 5/1992</li> <li>• Act No. 32/2009</li> <li>• Act No. 11/2010</li> <li>• Act No. 6/2014</li> <li>• Act No. 5/2017</li> <li>• Government Regulation No. 64/2010</li> <li>• Government Regulation No. 47/2015</li> </ul>



			<p>through legal measures, including protection of their wisdom in mitigating disasters</p>	<p>Disadvantaged Region (KEMENDES PDTT)</p> <ul style="list-style-type: none"> <li>Local disaster management authority (BPBD)</li> <li>Senate of the Republic of Indonesia (DPD)</li> </ul>	<ul style="list-style-type: none"> <li>Ministerial Regulation, Ministry of Interior Regulation No. 52/2014</li> <li>Ministerial Regulation, Ministry of Environment and Forestry No. 34/2017</li> <li>Ministerial Regulation, Ministry of Environment and Forestry No. 21/2019</li> <li>Ministerial Regulation, Ministry of Education and Culture No. 10/2014</li> <li>Ministerial Regulation, Ministry of Education and Culture No. 46/2018</li> </ul>
4.	Disaster Risk Financing Regime	Limited, Unsustainable, Relatively Inflexible Disaster Risk Financing	<ul style="list-style-type: none"> <li>Gradually increasing the minimum standard within national and regional budget specifically designed for disaster preparedness</li> <li>Continuously allocating some proportion in 'village funds' specifically for disaster risk reduction</li> <li>Accelerating the fulfillment of the existing Road Map for Implementing Disaster Risk Insurance and Financing</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Finance (KEMENKEU)</li> <li>Ministry of Interior (KEMENDAGRI)</li> <li>Ministry of Trade (KEMENDAG)</li> <li>Ministry of Villages, Development of Disadvantaged Regions (KEMENDES PDTT)</li> <li>Ministry of Public Housing and Public Works (KEMENPUPR)</li> </ul>	<ul style="list-style-type: none"> <li>Act No. 6/1983 and its amendments</li> <li>Act No. 12/1985 and its amendments</li> <li>Act No. 17/2003</li> <li>Act No. 1/2004</li> <li>Act No. 25/2004</li> <li>Act No. 32/2004</li> <li>Act No 17/2006</li> <li>Act No. 24/2007</li> <li>Act No. 39/2007</li> <li>Act No. 19/2013</li> <li>Act No. 6/2014</li> </ul>



			<p>Strategies — including the acceleration of a specific legal act on National Disaster Risk Insurance, and a tight deadline on the creation of a public service agency for Disaster Pooling Fund</p> <ul style="list-style-type: none"> <li>• Integrating micro insurance catastrophe risk into regular taxes such as land and building tax</li> <li>• Reviving the Multi-Donor Trust Fund initiative focusing on disaster preparedness, engaging domestic and international donors, including its utilization scheme</li> <li>• Increasing policy dialogues between the ministry of finance, international partners —development agencies and banks— and national universities on the visibility of adopting and implementing other types of disaster risk financing.</li> <li>• Ensuring the implementation of a flexible financial regime — customs during the emergency period</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Fisheries and Maritime Affairs (KEMENKP)</li> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> <li>• Audit Board of Indonesia (BPK)</li> <li>• Corruption Eradication Commission (KPK)</li> <li>• Financial Services Authority (OJK)</li> <li>• Central Bank</li> <li>• Public and Private Banks</li> <li>• Regional Governments — Province, Cities/Regencies/Villages</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 7/2014</li> <li>• Act No. 23/2014</li> <li>• Act No. 40/2014</li> <li>• Government Regulation No. 58/2005</li> <li>• Government Regulation No. 22/2008</li> <li>• Government Regulation No. 93/2010</li> <li>• Government Regulation No. 10/2011</li> <li>• Government Regulation No. 80/2011</li> <li>• Government Regulation No. 2/2012</li> <li>• Government Regulation No. 44/2012</li> <li>• Government Regulation No. 43/2014</li> <li>• Government Regulation No. 60/2014</li> <li>• Government Regulation No. 76/2014</li> <li>• Government Regulation No. 17/2018</li> <li>• Government Regulation No. 27/2018</li> <li>• Presidential Decision No. 42/2002</li> <li>• Ministerial Regulation, Ministry of Finance No. 69/2012</li> </ul>
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					<ul style="list-style-type: none"><li>• Ministerial Regulation, Ministry of Finance No. 162/2015</li><li>• Ministerial Regulation, Ministry of Finance No. 49/2016</li><li>• Ministerial Regulation, Ministry of Finance No. 82/2017</li><li>• Ministerial Regulation, Ministry of Finance No. 97/2019</li><li>• Ministerial Regulation, Ministry of Trade No. 70/2015</li><li>• Ministerial Regulation, Ministry of Trade No. 28/2017</li><li>• Ministerial Regulation, Ministry of Trade No. 21/2018</li><li>• Ministerial Regulation, Ministry of Trade No. 18/2019</li><li>• Ministerial Regulation, Ministry of Interior No. 13/2006</li><li>• Ministerial Regulation, Ministry of Public Housing and Public Works No. 21/2017, and Letter No. 10/2017</li><li>• Ministerial Regulation, Ministry of Villages,</li></ul>
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					<p>Development of Disadvantaged Regions No. 16/2018</p> <ul style="list-style-type: none"> <li>• Ministerial Regulation, Ministry of Fisheries and Maritime Affairs No. 70/2016</li> <li>• Ministerial Decision — Ministry of Development Planning Agency No. 20/2015</li> <li>• Head of BNPB Regulation No. 6A/2011</li> <li>• Head of BNPB Regulation No. 1/2017</li> <li>• Head of BNPB Regulation No. 2/2018</li> <li>• Head of BPK Regulation No. 1/2019</li> <li>• OJK Regulation No. 45/2017</li> </ul>
		Inadequate understanding on disaster risk insurance	<ul style="list-style-type: none"> <li>• Mainstreaming ‘disaster’ element into existing sectoral state insurances such as insurance for fishermen, farmers</li> <li>• Formalizing a regular dialogue on disaster management between the executive, legislative, and insurance association</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Finance (KEMENKEU)</li> <li>• Ministry of State-owned Enterprises (KEMENBUMN)</li> <li>• Ministry of Agriculture (KEMENTAN)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 24/2000</li> <li>• Act No. 17/2003</li> <li>• Act No. 1/2004</li> <li>• Act No. 14/2008</li> <li>• Act No. 12/2012</li> <li>• Government Regulation No. 27/2014</li> <li>• Government Regulation No. 28/2018</li> <li>• Ministerial Regulation, Ministry of Finance Regulation No. 97/2019</li> </ul>





			<ul style="list-style-type: none"> <li>Organizing capacity building programs on disaster-risk insurance and transparent disaster-risk financing for local governments particularly in disaster-prone regions</li> <li>Establishing a National Center of Excellence on Economics of Disasters and Disaster Risk Insurance</li> <li>Developing a sister-city program particularly on disaster risk financing between disaster-prone regions in Indonesia and disaster-prone regions abroad.</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Foreign Affairs (KEMLU)</li> <li>Financial Services Authority (OJK)</li> <li>XI Commission — The House of Representatives</li> <li>Universities and Higher Educational Institutions</li> <li>Insurance Association</li> </ul>	<ul style="list-style-type: none"> <li>Ministerial Regulation, Ministry of Agriculture Regulation No. 40/2015</li> <li>Ministerial Regulation, Ministry of Fisheries and Maritime Affairs Regulation No. 3/2019</li> <li>Ministerial Regulation, Ministry of Foreign Affairs Regulation No. 3/2019</li> <li>Ministerial Regulation, Ministry of Interior Regulation No. 69/2007</li> <li>Ministerial Regulation, Ministry of Interior Regulation No. 13/2006</li> </ul>
		<p>Misleading Private's role on disaster management and In dire Need Public-Partnership</p>	<ul style="list-style-type: none"> <li>Accelerating the adoption of a legal act on Corporate Social Responsibility which outlining disaster preparedness as one of its areas; consequently, manifested in all of its derivations</li> <li>Issuing a government regulation on a general guideline for areas of CSR and PPP mainly focusing on disaster mitigation</li> <li>Formulating an integrated map identifying potential loss due to</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of State-owned Enterprises (KEMENBUMN)</li> <li>Ministry of Social Affairs (KEMENSOS)</li> <li>Ministry of Industry (KEMENPERIN)</li> <li>Ministry of Cooperatives and Small and Medium Enterprises (KEMENKOP UKM)</li> <li>Indonesian Chamber of Commerce (KADIN)</li> </ul>	<ul style="list-style-type: none"> <li>Act No. 19/2003</li> <li>Act No. 25/2004</li> <li>Act No. 24/2007</li> <li>Act No. 25/2007</li> <li>Act No. 40/2007</li> <li>Act No. 20/2008</li> <li>Act No. 11/2009</li> <li>Government Regulation No. 1/2008</li> <li>Government Regulation No. 21/2008</li> <li>Government Regulation No. 47/2012</li> <li>Government Regulation No. 17/2013</li> </ul>



			<p>disasters for industries and small-medium enterprises (SME) in disaster prone-areas</p> <ul style="list-style-type: none"> <li>• Considering the creation of the National Contingency Plan for Private Sectors with regards to the occurrence of disasters</li> <li>• Providing capacity building programs on disaster preparedness for small and medium enterprises in disaster-prone regions</li> </ul>	<ul style="list-style-type: none"> <li>• National Disaster Management Authority (BNPB)</li> <li>• Geospatial Information Agency (BIG)</li> <li>• Association of Businessmen or Businesswomen (APINDO)</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 27/2014</li> <li>• Presidential Regulation No. 27/2013</li> <li>• Presidential Regulation No. 98/2014</li> <li>• Presidential Regulation No. 38/2015</li> <li>• Presidential Regulation No. 62/2015</li> <li>• Ministerial Regulation, Ministry of Social Affairs No. 13/2012</li> <li>• Ministerial Regulation, Ministry of Industry No. 40/2016</li> <li>• Ministerial Regulation, Ministry of State-owned Enterprises No. 2/2017</li> <li>• Ministerial Regulation, Ministry of Cooperatives and Small and Medium Enterprises No. 7/2015</li> <li>• Ministerial Regulation, Ministry of Cooperatives and Small and Medium Enterprises No. 18/2016</li> <li>• Ministerial Regulation, Ministry of Cooperatives and Small and Medium Enterprises No. 19/2016</li> </ul>
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		<p>Low investments on technological advancement, development, and use for disaster management</p>	<ul style="list-style-type: none"> <li>• Providing fiscal and non-fiscal incentives for technological investments and transfer-of-technology related to disaster management, particularly in disaster-prone regions.</li> <li>• Advancing economic diplomacy targeting developed states to seek collaboration in potential areas of high-technology for disasters, including bridging the communication between foreign companies and relevant agencies in Indonesia</li> <li>• Maximize the use of big data and artificial intelligence to address the complexity of bureaucratic procedures on disaster management including at the analytical stage and early warning system</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Finance (KEMENKEU)</li> <li>• Ministry of Industry (KEMENPERIN)</li> <li>• Ministry of Foreign Affairs (KEMLU)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> <li>• National Institute of Aeronautics and Space (LAPAN)</li> <li>• Agency for the Assessment and Application of Technology (BPPT)</li> <li>• Indonesian Institute of Sciences (LIPI)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> <li>• Indonesia Investment Coordinating Board (BKPM)</li> </ul>	<ul style="list-style-type: none"> <li>• Head of BNPB Regulation No. 12/2014</li> <li>• Act No. 24/2000</li> <li>• Act No. 25/2007</li> <li>• Act No. 11/2008</li> <li>• Act No. 14/2008</li> <li>• Act No. 28/2009</li> <li>• Government Regulation No. 30/1950</li> <li>• Government Regulation No. 69/2010</li> <li>• Government Regulation No. 52/2011</li> <li>• Government Regulation No. 11/2016</li> <li>• Government Regulation No. 24/2019</li> <li>• Government Regulation No. 45/2019</li> <li>• Presidential Regulation No. 56/2015</li> <li>• Ministerial Regulation — Ministry of Finance No. 130/2011</li> <li>• Head of BKPM Regulation No. 16/2015</li> <li>• BKPM Regulation No. 4/2019</li> </ul>
5.	Resilient Infrastructure	Many critical infrastructures located in high-risk zones	<ul style="list-style-type: none"> <li>• Building green belts around critical infrastructures in disaster-prone regions</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Public Housing and Public Works (KEMENPUPR)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 28/2002</li> <li>• Act No 25/2004</li> <li>• Act No. 23/2007</li> <li>• Act No. 24/2007</li> </ul>



			<ul style="list-style-type: none"> <li>• Ensuring a regular disaster simulation is carried out by the management of infrastructure, telecommunication, and energy provider, including paying attention on the disabled-friendly element</li> <li>• Formulating mitigation strategy or disaster risk modeling for every transportation routes either inland, air, and water according to their respective indigenous risks particularly in disaster-prone areas</li> <li>• Conducting a regular evaluation of the resiliency of physical infrastructures related to transportation, energy, telecommunication, roads, hospital, shelters.</li> <li>• Providing disaster warning signs and evacuation symbols in all tourist attractions, particularly in disaster-prone regions.</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Social Affairs (KEMENSOS)</li> <li>• Ministry of Transportation (KEMENHUB)</li> <li>• Ministry of Tourism (KEMENPAR)</li> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• National Disaster Management Authority (BNPB)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 17/2008</li> <li>• Act No. 1/2009</li> <li>• Act No. 22/2009</li> <li>• Act No. 44/2009</li> <li>• Government Regulation No. 26/2006</li> <li>• Government Regulation No. 21/2008</li> <li>• Government Regulation No. 20/2010</li> <li>• Government Regulation No. 40/2012</li> <li>• Ministerial Regulation — Ministry of Transportation Regulation No. 48/2002</li> <li>• Ministerial Regulation — Ministry of Transportation Regulation No. 69/2013</li> <li>• Ministerial Regulation — Ministry of Transportation Regulation No. 20/2014</li> <li>• Ministerial Regulation — Ministry of Transportation Regulation No. 55/2015</li> <li>• Ministerial Regulation — Ministry of Tourism No. 10/2019</li> <li>• Ministerial Regulation — Ministry of Social Affairs No. 128/2011</li> </ul>
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					<ul style="list-style-type: none"> <li>• Head of BNPB Regulation No. 7/2015</li> </ul>
		Poor quality of the construction	<ul style="list-style-type: none"> <li>• Advancing the implementation of ‘Earthquake-resilient building principles’ continuously among professional architects’ association, private sectors, and design-focused startups</li> <li>• Regularly reviewing certifications on the construction service and its commitments to disaster-resilient infrastructure</li> <li>• Encouraging regions to formulate a respective building code which takes into account different types of risks</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Public Housing and Public Works (KEMENPUPR)</li> <li>• Ministry of Manpower (KEMENAKER)</li> <li>• Ministry of Communication and Information (KEMENKOMINFO)</li> <li>• Professional association</li> <li>• Building-design startups</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 28/2002</li> <li>• Act No. 2/2017</li> <li>• Act No. 6/2017</li> <li>• Government Regulation No. 36/2005</li> <li>• Ministerial Regulation — Ministry of Health Regulation No. 24/2016</li> <li>• Ministerial Regulation — Ministry of Public Public Works No. 6/2009</li> <li>• Ministerial Regulation — Ministry of Public Housing and Public Works No. 29/2006</li> <li>• Ministerial Regulation — Ministry of Public Works Regulation No. 6/2009</li> <li>• Ministerial Regulation — Ministry of Public Works Regulation No. 19/2011</li> <li>• Ministerial Regulation — Ministry of Public Housing and Public Works No. 5/2016</li> <li>• Ministerial Regulation — Ministry of Manpower Regulation No. 1/1980</li> </ul>



					<ul style="list-style-type: none"> <li>• Collaborative Ministerial Regulation — Ministry of Interior, Ministry of Public Housing, Ministry of Communication and Information, and Indonesian Investment Coordinating Board</li> </ul>
	Limited numbers of emergency shelters and safe evacuation routes	<ul style="list-style-type: none"> <li>• Identifying numbers of existing shelters including its position, capacity, and its connecting routes across Indonesia</li> <li>• Stipulating an annual target for the development of shelters and public safety centers particularly in crowded places located in disaster-prone regions</li> <li>• Issuing a legally-binding regulation which obliges every educational institution particularly in disaster-prone regions to have an evacuation plan and a safe meeting point</li> <li>• Intensifying a national campaign on ‘one safe room for one family’</li> <li>• Providing a common national standard for the disaster-resilient building of worships, and making a disaster-risk</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Public Housing and Public Works (KEMENPUPR)</li> <li>• Ministry of Education and Culture (KEMENDIKBUD)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> <li>• Ministry of Communication and Information (KEMENKOMINFO)</li> <li>• Ministry of Health (KEMENKES)</li> <li>• Ministry of Religious Affairs (KEMENAG)</li> <li>• Ministry of Interior (KEMENDAGRI)</li> <li>• Ministry of Fisheries and Maritime Affairs (KEMENKP)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 16/1985</li> <li>• Act No. 28/2002</li> <li>• Act No. 32/2004</li> <li>• Act No. 24/2007</li> <li>• Act No. 26/2007</li> <li>• Act No. 27/2007</li> <li>• Act No. 23/2014</li> <li>• Act No. 6/2017</li> <li>• Government Regulation No. 4/1988</li> <li>• Government Regulation No. 36/2005</li> <li>• Government Regulation No. 21/2008</li> <li>• Government Regulation No. 64/2010</li> <li>• Ministerial Regulation — Ministry of Public Works Regulation No. 24/2008</li> <li>• Ministerial Regulation — Ministry of Public Works Regulation No. 6/2009</li> </ul>	



			<p>element as an administrative requirement for establishing a new building of warship</p> <ul style="list-style-type: none"> <li>• Imposing higher taxes for public buildings which do not have a safe meeting point and shelter particularly in disaster-prone regions</li> </ul>	<ul style="list-style-type: none"> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• National Standardization Agency (BSN)</li> </ul>	<ul style="list-style-type: none"> <li>• Ministerial Regulation — Ministry of Public Works Regulation No. 19/2011</li> <li>• Ministerial Regulation — Ministry of Health Regulation No. 19/2016</li> <li>• Ministerial Regulation — Ministry of Health Regulation No. 47/2018</li> <li>• Collaborative Ministerial Regulation — Ministry of Religious Affairs No. 9/2006 and Ministry of Interior No. 8/2006</li> <li>• Head of BNPB Regulation No. 17/2009</li> <li>• Head of BNPB Regulation No. 7/2015</li> </ul>
		<p>Dependencies on one single energy and telecommunication source</p>	<ul style="list-style-type: none"> <li>• Encouraging telecommunication providers, operators and energy-related companies to diversify its infrastructure and prepare disaster-risk modeling, and a contingency plan during an emergency period, particularly for disaster-prone regions</li> <li>• Regularly carrying a simulation to test the operational back-up system of transportation,</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Public Works and Public Housing (KEMENPUPR)</li> <li>• Ministry of Energy and Mineral Resources (KEMENESDM)</li> <li>• Ministry of State-owned Enterprises (KEMENBUMN)</li> <li>• Ministry of Communication and Information (KEMENKOMINFO)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 36/1999</li> <li>• Act No. 30/2007</li> <li>• Act No. 30/2009</li> <li>• Government Regulation No. 14/2012</li> <li>• Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 1/2017</li> <li>• Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 11/2017</li> </ul>



			<p>telecommunication, and energy sectors</p> <ul style="list-style-type: none"> <li>Continuously developing alternative energy sources which still could be functional during an emergency period</li> </ul>	<ul style="list-style-type: none"> <li>Telecommunication Providers and Operators</li> </ul>	<ul style="list-style-type: none"> <li>Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 50/2017</li> <li>Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 53/2018</li> <li>Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 12/2019</li> <li>Ministerial Regulation — Ministry of Energy and Mineral Resources Regulation No. 13/2019</li> <li>Ministerial Regulation — Ministry of Communication and Information Regulation No.10/2018</li> <li>Collaborative Ministerial Regulation — Ministry of Interior No. 18/2009, Ministry of Public Works No. 7/2009, Ministry of Communication and Information No. 19/2009, and Indonesian Investment Coordinating Board Regulation No. 3/2009</li> </ul>
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6.	Disaster-related Research	Disconnection between Scientists and Strategic Policy Makers	<ul style="list-style-type: none"> <li>• Regularly formulating a list of prioritized agenda on national disaster-related research which needed by the government; — issuing a national roadmap on disaster-related research</li> <li>• Providing capacity building programs on the creation of strategic policy recommendation for scientists and experts in universities</li> <li>• Strengthening the national network between disaster-related study programs in universities across Indonesia;</li> <li>• Institutionalizing Indonesian Disaster-related experts' registry (IDER) which currently managed by the IABI to be systematically integrated with the government's data</li> <li>• Institutionalizing dialogues between disaster-related experts and study centers of each relevant ministry and government agency</li> </ul>	<ul style="list-style-type: none"> <li>• National Development Planning Agency (BAPPENAS)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> <li>• Ministry of Health (KEMENKES)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Indonesian Institute of Sciences (LIPI)</li> <li>• National Institute of Aeronautics and Space (LAPAN)</li> <li>• National Research Council (DRN)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 18/2002</li> <li>• Act No. 24/2007</li> <li>• Presidential Regulation No. 38/2018</li> <li>• Ministerial Regulation — Ministry of Research, Technology, and Higher Education No. 46/2017</li> <li>• Ministerial Regulation — Ministry of Research, Technology and Higher Education No. 40/2018</li> </ul>
		Limited Exploration, Reviews, and Updates on Disaster Scientific Data and Map	<ul style="list-style-type: none"> <li>• Studying the possibility of giving a high-level award given by the president for parties who carried out innovations on disaster-related issues</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Foreign Affairs (KEMLU)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 24/2000</li> <li>• Act No. 24/2007</li> <li>• Act No. 20/2009</li> <li>• Act No. 4/2011</li> <li>• Government Regulation No. 41/2006</li> </ul>



			<ul style="list-style-type: none"> <li>• Simplifying bureaucracy with regard to the international cooperation on disaster research</li> <li>• Scheduling a regular review on disaster map, particularly those areas who recently suffered from disasters, including determining a prevailing period of those maps</li> <li>• Designating one existing agency to function as a knowledge management center of all lessons-learned from previous disaster events</li> <li>• Intensifying disaster research from a social, economic, legal, and cultural perspective</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of State Secretariat (KEMENSESNEG)</li> <li>• National Disaster Management Authority (BNPB)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 1/2010</li> <li>• Presidential Regulation No. 20/2018</li> <li>• Presidential Regulation No. 8/2013</li> <li>• Ministerial Regulation — Ministry of Research, Technology, and Higher Education No. 46/2017</li> <li>• Ministerial Regulation — Ministry of Research, Technology and Higher Education No. 40/2018</li> </ul>
		<p>Degeneration of Disaster Experts both quantity and quality</p>	<ul style="list-style-type: none"> <li>• Considering the creation of a special polytechnic on disaster management particularly in disaster-prone areas</li> <li>• Setting the minimum target, timeline, and roadmap of Indonesian disaster-experts' regeneration</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Health (KEMENKES)</li> <li>• Ministry of Social Affairs (KEMENSOS)</li> <li>• Ministry of Finance (KEMENKEU)</li> <li>• Ministry of Research, Technology, and Higher Education (KEMENRISTEKDIKTI)</li> <li>• Ministry of Energy and Mineral Resource (KEMENESDM)</li> </ul>	<ul style="list-style-type: none"> <li>• Act No. 24/2007</li> <li>• Act No. 12/2012</li> <li>• Government Regulation No. 4/2014</li> </ul>



				<ul style="list-style-type: none"> <li>• National Disaster Management Authority (BNPB)</li> <li>• Meteorology, Climatology, and Geophysical Agency (BMKG)</li> <li>• National Institute of Aeronautics and Space (LAPAN)</li> <li>• Agency for the Assessment and Application of Technology (BPPT)</li> <li>• Geospatial Information Agency (BIG)</li> <li>• Indonesian Institute of Sciences (LIPI)</li> <li>• Indonesian Search and Rescue Agency (BASARNAS)</li> <li>• Indonesian National Armed Forces (TNI)</li> <li>• Indonesian National Police (POLRI)</li> </ul>	
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