

# Identifying the Weak Foundation of Public Health Resilience for National Disaster Policy in Indonesia's Mid-term Development Agenda 2015–2019: A Policy Content Analysis

Gita Miranda Warsito<sup>1\*</sup>, Meiwita Paulina Budiharsana<sup>2</sup>, Sharyn Burns<sup>3</sup>

<sup>1</sup>Post Graduate Student, Joint Master's Degree in International Health, Faculty of Public Health, Universitas Indonesia and Faculty of Health Sciences, Curtin University

<sup>2</sup>Department of Biostatistics and Population Studies, Faculty of Public Health, Universitas Indonesia

<sup>3</sup>Health Promotion, School of Public Health, Faculty of Health Sciences, Curtin University

## Abstract

Indonesia is one of the most susceptible nations toward natural disasters in the world. Since 1992, approximately 37 tsunami incidents have occurred in Indonesia, with at least 1,244 cases of natural disasters during 2018. Despite the overwhelming impact of disasters on Indonesia, Public Health Resilience, as an approach to disaster countermeasures, has been poorly elaborated in Indonesia's development agenda (National Mid-term Development Plan (NMDP), or *Rencana Pembangunan Jangka Menengah Nasional (RPJMN)*, 2015 - 2019). By utilizing the method of policy content analysis, this study aimed to analyze the policy background of Public Health Resilience against disasters in the NMDP 2015 - 2019 and National Disaster Management Authority (NDMA)'s, or *Badan Nasional Penanggulangan Bencana (BNPB)*, Strategic Plan 2015 - 2019. The results showed that the NMDP 2015 - 2019 and NDMA's Strategic Plan 2015 - 2019 lack the scientific background for Public Health Resilience building in Indonesia. Enhancing the scientific background in these plans will enhance focus on evidence-based Public Health Resilience establishment.

**Keywords:** Indonesia's development agenda, policy content analysis, Public Health Resilience

## Introduction

Indonesia's geographic location in the Pacific's Ring of Fire, which is the most active seismic zone on earth, contributes to the high number of natural disasters that occur in Indonesia. Approximately, 90% of earthquakes globally occur in this Ring of Fire, where the risk of tsunami is exceptionally high. In addition, the world's highest number of deaths caused by the tsunami is recorded in Indonesia.<sup>1,2</sup>

The incidence of natural disaster in Indonesia has an increasing trend.<sup>3</sup> Despite the dreadful history of natural disasters, the early warning system of Indonesia is considered ineffective.<sup>4,5</sup> Based on the results of the risk assessment, the total number of people exposed to the tsunami disaster risk is 4,102,406 people in all provinces in Indonesia, with potential losses reaching IDR 879 trillion.<sup>6</sup>

The National Mid-term Development Plan (NMDP), or *Rencana Pembangunan Jangka Menengah (RPJMN)*, 2015 - 2019 is the third implementation stage of the 2005 - 2025 National Long-term Development Plan, or *Rencana Pembangunan Jangka Panjang Nasional (RPJPN)*, which is the guideline for ministries or institu-

tions in preparing the Ministry or Agency Strategic Plan and is considered by regional governments for adjusting their respective regional development plans to achieve national development targets. In accordance with NMDP 2015 - 2019, the National Disaster Management Authority (NDMA), or *Badan Nasional Penanggulangan Bencana (BNPB)*, arranged the NDMA Strategic Plan 2015 - 2019. The NDMA assists the President of the Republic of Indonesia in coordinating the integrated disaster management planning and emergency activities and in implementing disaster management and emergencies before, during, and after disasters (prevention, preparedness, emergency handling, and recovery).

Strategies implemented before disasters occur aim to decrease people's vulnerability by increasing their resilience.<sup>7</sup> Despite the overwhelming impact of disasters on Indonesia, Public Health Resilience, as an approach to disaster countermeasures, is only mentioned once in NMDP 2015 - 2019. The NMDP is also the policy agenda for Indonesia's nationwide development.

This study aimed to analyze the transformation from the concept to the implementation of Public Health Resilience against disasters in Indonesia's development

**Correspondence\***: Gita Miranda Warsito, Joint Master's Degree in International Health, Faculty of Public Health Universitas Indonesia and Faculty of Health Sciences Curtin University, Australia, E-mail: 19105114@student.curtin.edu.au, Phone: +62-85645316463

Received : August 27, 2019  
Accepted : January 17, 2020  
Published: May 25, 2020

agenda 2015 - 2019 and its derived policy for disaster management, NDMA's Strategic Plan 2015 - 2019.

The concept of resilience focuses on preparedness, mitigating vulnerability toward catastrophic events, such as pandemics, climate change, terrorism, or even natural disasters.<sup>8</sup> Keim,<sup>9</sup> notes that public health is uniquely located at the community level by promoting safety and health to reduce pre-existing health threats, build social capital, and strengthen community resilience. In building resilient communities, eight levers (capacities), such as wellness, access, education, engagement, self-sufficiency, partnership, quality, and efficiency, should be supported; these levers can be applied in disaster preparedness planning.<sup>10</sup>

The measurement of community resilience is essential for its operationalization and implementation. Measurement allows communities, states, and the nation as a whole to analyze the implementation of hypothesized links among inputs into the community resilience process and outcomes. These eight levers are in line with the disaster risk reduction values of Sendai Frameworks and Essential Public Health Services for Preparedness and Recovery.<sup>9,11,12</sup>

**Method**

Policy content analysis on NMDP and NDMA's Strategic Plan 2015 - 2019 was conducted. This study intended to analyze the policy content, specifically about Public Health Resilience, to find alternative solutions for the Public Health Resilience concept of Indonesia's development agenda (NMDP 2020 - 2025), especially on its policy background.<sup>13</sup> This study was developed on the basis of validated criteria for policy background analysis,

as shown in Table 1.<sup>14</sup>

Based on the criterion in Table 1, policy documents were mapped and critically appraised with the supporting literature study. To ensure the consistency of the appraisal and to minimize the subjectivity of this study, the mapping and analysis of the documents were cross-checked among the authors and consulted with policy experts from NDMA and the Indonesian Ministry of Health.

**Results**

The NMDP 2015 - 2019 and NDMA's Strategic Plan 2015 - 2019 documents were electronically obtained from the Indonesian Government's official webpage.<sup>15-18</sup> The obtained documents were further analyzed on the basis of a validated predefined set of background criteria for document policy analysis.

Based on the adopted health policy background analysis criteria<sup>14</sup>, the summary of the findings is presented as a checklist in Table 2.

Full-term Public Health Resilience is only mentioned

**Table 1. Policy Background Analysis Criteria**

Criterion	Specification
Policy background	The scientific grounds of the health policy are established. Based on the literature review, the goals are clearly stated. The background of the health policy is explicit. <ol style="list-style-type: none"> <li>Multiple sources (informants, books, scientific articles, or other information sources)</li> <li>Based on quantitative or qualitative analysis</li> <li>Interpretation established from multiple scientific sources, observations, institutions, or all three</li> </ol>

**Table 2. Policy Background Analysis Results**

Criterion	Specification	Availability	
		NMDP 2015 - 2019	NDMA's Strategic Plan 2015 - 2019
Policy background	The scientific grounds of the health policy are established.	-	✓
	Based on the literature review, the goals are clearly stated.	-	-
	The background of the health policy is explicit:		
	1. Multiple sources (informants, books, scientific articles, or other information sources)	-	-
	2. Based on quantitative or qualitative analysis	-	✓
	3. Interpretation established from multiple scientific sources, observations, institutions, or all three	-	-

**Notes:** NMDP: National Mid-term Development Plan; NDMA: National Disaster Management Authority

once in NMDP 2015 - 2019 as one of the strategic fields that must improve to increase public adaptability toward climate change. Policy background has three main specifications, namely, the establishment of health policy scientific grounds, the clarity of evidence based goals, and the clarity of the health policy background.

In NMDP 2015 - 2019, no scientific ground is mentioned for the importance of Public Health Resilience. Despite being mentioned once in NMDP 2015 - 2019, only one statement regarding the need to improve Public Health Resilience for increasing public adaptability, specifically, toward climate change is found. Scientific grounds for Public Health Resilience in NDMA's Strategic Plan 2015 - 2019 are explained in Chapter II, which covers the conditions and challenges related to disaster events in Indonesia. Unfortunately, the need for Public Health Resilience is not mentioned in the policy itself.

## Discussion

Disaster events are a public health concern that affect the social determinants of health within communities with regard to the impacts of such events on communicable diseases, non-communicable diseases (NCDs), and mental health.<sup>19,20</sup> Four categories of communicable diseases in disasters exist, namely, communicable diseases due to contaminated food supply and water, respiratory infections, vector-borne diseases, and communicable diseases due to wounds and injuries.<sup>7,21,22</sup> In the long term, disasters also affect the increasing incidence of NCDs. The declining food production due to the agricultural impact of disasters and inadequate food supply may also contribute to malnutrition and decreased productivity.<sup>21</sup>

Psychosocial disorders, such as post-traumatic stress disorder (PTSD), have also been linked to disaster events, where 68% out of 160 disasters during 1981 and 2001 reported PTSD cases.<sup>21</sup> Another study highlights that disasters can potentially cause violence, either self-directed or interpersonal, due to the personal distress caused by the scarcity of basic needs, powerlessness, and aggravation.<sup>23</sup>

Seaman, *et al.*,<sup>8</sup> and Dyakova, *et al.*,<sup>24</sup> define resilience for public health as the population ability to endure, adapt, and innovate thinking and functioning in challenging circumstances within uncertainty or adversity. Public Health Resilience has eight specific goals, namely, wellness, access, education, engagement, self-sufficiency, partnership, quality, and efficiency.<sup>10</sup> Unfortunately, within the analyzed policy documents, these goals are neither mentioned nor clearly elaborated on the basis of definite scientific backgrounds.

Policy background is categorized as explicit when it uses multiple sources on the basis of quantitative or qualitative analysis and is interpreted from multiple sci-

entific sources.<sup>14</sup> NMDP 2015 - 2019 fails to fulfill these criteria, as it neither cites nor refers any scientific information to support the importance of Public Health Resilience in Indonesia. The mentioned background in NMDP 2015 - 2019 Book I, Chapter 2 mostly explains the vision and mission of the national development plan that is extracted from Constitution No.17/2007 about National Long-term Development Plan 2005 - 2025. By contrast, NDMA's Strategic Plan 2015 - 2019 mainly uses the NDMA constitution, and policy's internal data with minor citations and without references.

*"Based on Indonesia's Disaster Data and Information, the intensity of disaster events tends to increase."* NDMA's Strategic Plan 2015-2019 (Page 9)

*"Based on the Indonesian Disaster Risk Index (Indeks Risiko Bencana Indonesia / IRBI) Data in 2013, 80% of districts or cities throughout Indonesia are categorized as areas with high disaster risk levels."* NDMA's Strategic Plan 2015-2019 (Page 10)

Within the analyzed documents, in-text citations only mention NDMA's internal institution data, such as Indonesia's Disaster Data and Information, [www.bnpb.go.id](http://www.bnpb.go.id), and the Indonesian Disaster Risk Index. Hence, the policy with regard to the multiplicity of data resources is unclear. From these internal institutional data, quantitative and qualitative analyses must be conducted, as the policy also stated the conclusion of the data obtained. Neither scientific sources nor observational results were found in documents.

A scientific study is essential to improve the quality of human lives.<sup>25</sup> The lack of scientific evidence within the analyzed policy documents highlights the common problems that policymakers face in arranging the policy; that is, to decode the study results or to discern policy issues into written statements.<sup>26</sup> This problem can be solved by seeking help from external scientific or policy advisers. A knowledge-driven approach in policymaking can utilize knowledge to solve specific problems where scientific approaches with dependable rigor, robustness, and objectivity can be trusted by all.<sup>26,27</sup> A clear scientific background within the policy can also make a clear distinction for other health policy criteria that follow the policy background arrangement, such as goals, resources, monitoring and evaluation, and obligation.<sup>14</sup> Dobrow, *et al.*,<sup>28</sup> also emphasize that the explicit attention to the research relevance of the policy can clarify the role of stakeholders in engagement and feedback mechanisms. In the policy-making process, scientific background is the foundation of any decisions being made. A lack of scientific background providing rationale for the policy means that its foundation is not dependable enough to be trusted by policy actors, including the public, whom the policy is

being made for.

Due to time constraints, the confirmation procedure from policy actors and the public is excluded, and the analysis is solely conducted through policy documents. To minimize the potential subjectivity in the research conduct, this study adopted the validated document policy criteria by Cheung, *et al.*<sup>14</sup>

### Conclusion

The fragile foundation for Public Health Resilience in Indonesia's development agenda and NDMA's Strategic Plan 2015 - 2019 is detected in this policy content analysis, although the exact phrase of Public Health Resilience already exists within the policy. The scientific grounds of the health policy are only established in NDMA's Strategic Plan 2015 - 2019; none of the goals in these documents are clearly stated in the literature review, and the policy background is vague where only NDMA's Strategic Plan is based on quantitative or qualitative analysis. Moreover, only NDMA's internal institution data are used.

### Recommendation

For the sake of embedding Public Health Resilience establishment in Indonesia's development agenda, policy makers must strengthen the scientific background of the next period of the Mid-term Development and Strategic Plans for 2020 - 2024 to ensure a great focus on evidence-based Public Health Resilience establishment. This problem is potentially solved using external scientific or policy advisers.

### Abbreviations

NMDP: National Mid-term Development Plan; *RPJMN*: *Rencana Pembangunan Jangka Menengah*; National Long-term Development Plan; *RPJPN*: *Rencana Pembangunan Jangka Panjang Nasional*; NDMA: National Disaster Management Authority; *BNPB*: *Badan Nasional Penanggulangan Bencana*; NCDs: Non-communicable Diseases; PTSD: Post-traumatic Stress Disorder; *IRBI*: *Indeks Risiko Bencana Indonesia* / Indonesian Disaster Risk Index.

### Ethics Approval and Consent to Participate

Not Applicable

### Competing Interest

Authors declare that have no competing interests to disclose.

### Availability of Data and Materials

The authors have full access to all the data in the study and take responsibility for the integrity of the data.

### Authors' Contribution

Gita Miranda Warsito, Meiwita Paulina Budiharsana, and Sharyn Burns participated in the planning, analysing data and reviewing the article

drafts. Gita Miranda Warsito contributed in developing the study framework, collecting and analysing data, drafting and reviewing the article drafts. Meiwita Paulina Budiharsana contributed in developing the study framework and reviewing the article drafts. Sharyn Burns contributed in study planning, reviewing and editing the article.

### Acknowledgment

The authors thank Dr. Dewi Susanna, MS, Dr. Budi Hartono, dr. Fuadi Darwis, MPH., Dr. Tris Eryando, MA, and Professor Budi Haryanto for their helpful inputs of this article.

### References

1. The World Bank. Global facility for disaster reduction and recovery. building Indonesia resilience to disaster; 2017.
2. United Nation Office of Disaster Risk Reduction. UNISDR calls for greater attention to disaster risk in Pacific's "Ring of Fire"; 2018 [cited 2019 Jan 25]; p. 60938.
3. Badan Nasional Penanggulangan Bencana. Jumlah kejadian bencana alam 2018; 2019.
4. Griffiths J. How Indonesia's tsunami warning system failed its citizens again. CNN; 2018 [cited 2019 Jan 25].
5. Muhari A, Diposaptono S, Imamura F. Toward an integrated tsunami disaster mitigation: lessons learned from previous tsunami events in Indonesia. *Journal of Natural Disaster Science*. 2007; 29 (1): 13–9.
6. Badan Nasional Penanggulangan Bencana. Rencana nasional penanggulangan bencana 2015-2019. Jakarta; 2014.
7. Jafari N, Shahsanai A, Memarzadeh M, Loghmani A. Prevention of communicable diseases after disaster: a review. *Journal of Research in Medical Science*. 2011; 16 (7): 956–62.
8. Seaman P, McNeice V, Yates G, McLean J. Resilience for public health Supporting transformation in people and communities. Glasgow: Glasgow Centre for Population Health; 2014.
9. Keim ME. Building human resilience: the role of public health preparedness and response as an adaptation to climate change. *American Journal of Preventive Medicine*. 2008; 35 (5): 508-16.
10. Chandra A, Acosta JD, Howard S, Uscher-Pines L, Williams M V., Yeung D, et al. Building community resilience to disasters: a way forward to enhance national health security. *Rand Health Quarterly*. 2011; 1 (1): 6.
11. Institute of Medicine. Healthy, resilient, and sustainable communities after disasters: strategies, opportunities, and planning for recovery. Vol. 1. The National Academy Press; 2015. p. 505.
12. Morton MJ, Lurie N. Community resilience and public health practice. *American Journal of Public Health*. 2013; 103 (7): 1158–60.
13. Buse K, Mays N, Walt G. Making health policy: second edition. Bershire, UK: McGraw-Hill Education; 2012. p. 222.
14. Cheung KK, Mirzaei M, Leeder S. Health policy analysis: a tool to evaluate in policy documents the alignment between policy statements and intended outcomes. *Australian Health Review*. 2010; 34: 405–13.
15. Badan Nasional Penanggulangan Bencana. Rencana strategis badan nasional penanggulangan bencana tahun 2015-2019. 2015; 91.
16. Kementerian Perencanaan Pembangunan Nasional, Badan Perencanaan Pembangunan Nasional. Lampiran Peraturan Presiden Nomor 2 Tahun 2015 Tentang RPJM 2015-2019 (Buku II: Agenda

- Pembangunan Bidang); 2015. p. 2015–9.
17. Kementerian Perencanaan Pembangunan Nasional, Badan Perencanaan Pembangunan Nasional. Lampiran Peraturan Presiden Nomor 2 Tahun 2015 Tentang RPJM 2015-2019 (Buku III: Agenda Pembangunan Wilayah). Buku III Agenda Pembangunan Wilayah. 2015. p. 2015–9.
  18. Kementerian Perencanaan Pembangunan Nasional, Badan Perencanaan Pembangunan Nasional. Lampiran Peraturan Presiden Nomor 2 Tahun 2015 Tentang RPJM 2015-2019 (Buku I: Agenda Pembangunan Nasional); 2015. p. 1–887.
  19. Presiden Republik Indonesia. Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. Indonesia; 2007.
  20. Wilkinson R, Marmot M. Social determinants of health: the solid facts. 2nd edition. World Health Organization; 2005. 2: p. 1–33.
  21. Institute of Medicine and National Research Council. Earth materials and health: research priorities for earth science and public health. Washington DC: The National Academies Press; 2007. p. 99–111.
  22. Noji EK. Public health issues in disasters. *Critical Care Medicine*. 2005; 33(1 (Suppl.)): S29–33.
  23. Rezaeian M. The association between natural disasters and violence: a systematic review of the literature and a call for more epidemiological studies. *Journal of Research in Medical Science*. 2013; (December):1–5.
  24. Dyakova M, Hamelmann C, Bellis MA, Besnier E, Grey CNB, Ashton K, et al., Investment for health and well-being: a review of the social return on investment from public health policies to support implementing the Sustainable Development Goals by building on Health 2020. Copenhagen; 2017.
  25. Nass SJ, Levit LA, Gostin LO. Beyond the HIPAA privacy rule: enhancing privacy, improving health through research. National Academies Press (US); 2009. p. 320.
  26. Hanney SR, Gonzalez-Block MA, Buxton MJ, Kogan M. The utilisation of health research in policy-making: concepts, examples and methods of assessment. *Health Research Policy and System* 1. 2005.
  27. Carol H. Weiss. The Many Meanings of Research Utilization. *Public Administration Review*. 1979; 39 (September-October): 426–31.
  28. Dobrow MJ, Miller FA, Frank C, Brown AD. Understanding relevance of health research: considerations in the context of research impact assessment. *Health Reseach Policy and System*. 2017 Apr 17; 15 (1): 31.