

## The Implementation of Disaster Mitigation based on Qur'anic Interpretation: Muhammadiyah Case Study

*Implementasi Mitigasi Bencana berbasis Penafsiran Al-Qur'an: Studi Kasus Muhammadiyah*

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### Abstract

Most Indonesian's live in vulnerable areas. Various kinds of disasters come alternately with the victims of property and humans. However, there are some people who feel that the disaster is a punishment. This leads to preventive measures or disaster mitigation that are carried out to reduce casualties not to be done, except the appeal not to sin. Muhammadiyah is one of the Islamic organizations that have concerns about disaster mitigation. This research reveals how Muhammadiyah's perspective on disaster mitigation is. How is the initiation done for the objectivation of mitigation disaster? In addition, see the form of the program carried out as a form of internalization of disaster mitigation in Muhammadiyah. This research is qualitative research using two approaches, namely living Qur'an and phenomenology. The construction of Muhammadiyah's positive understanding of disasters and disaster mitigation stems from the study of two groups of Qur'anic verses, First, on causality, which is to fully understand why a disaster occurs. Verses studied include az-Zumar (39):9; an-Naml (27):88; Ghafir (41:21). Second, man's role as caliph governs the universe. Verses studied include az-Zumar (39):18; al-Hashim (59:18); al-Ahzab (33:72); and al-Qasas (28:77). The initiation of disaster mitigation was carried out by Muhammadiyah after the tsunami in Aceh in 2004 and strengthened after the great earthquake in Yogyakarta in 2006. Its main programs are fostering Disaster Resilient Communities, Disaster Safe Schools, and Disaster Safe Hospitals. A positive view of disasters, a friendly attitude with nature based on science. In addition, preventive disaster mitigation measures are the findings of this study. These three attitudes need to be socialized to Indonesian people who live in vulnerable areas.

Keywords: Disaster; Disaster Mitigation, Qur'anic Interpretation; Muhammadiyah

### Abstrak:

Sebagian besar orang Indonesia tinggal di daerah rawan. Berbagai macam bencana datang bergantian dengan korban properti dan manusia. Namun, ada beberapa orang yang merasa bahwa bencana adalah hukuman. Hal ini mengarah pada langkah-langkah pencegahan atau mitigasi bencana yang dilakukan untuk mengurangi korban yang tidak boleh dilakukan, kecuali imbauan untuk tidak berbuat dosa. Muhammadiyah adalah salah satu ormas Islam yang memiliki kepedulian terhadap mitigasi bencana. Penelitian ini mengungkapkan bagaimana perspektif Muhammadiyah tentang mitigasi bencana. Bagaimana inisiasi dilakukan untuk objektivasi mitigasi bencana. Selain itu, melihat bentuk program yang dilakukan sebagai bentuk internalisasi mitigasi bencana di Muhammadiyah. Penelitian ini merupakan penelitian kualitatif dengan menggunakan dua pendekatan, yaitu Living Qur'an dan fenomenologi. Pembangunan pemahaman positif Muhammadiyah tentang bencana dan mitigasi bencana berasal dari kajian dua kelompok ayat Al-Qur'an, Pertama, tentang kausalitas, yaitu memahami secara tuntas mengapa terjadi bencana. Ayat-ayat yang dipelajari termasuk az-Zumar



(39): 9; an-Naml (27):88; Ghafir (41:21). Kedua, peran manusia sebagai khalifah mengatur alam semesta. Ayat-ayat yang dipelajari termasuk az-Zumar (39): 18; al-Hasyim (59:18); al-Ahzab (33:72); dan al-Qasas (28:77). Inisiasi mitigasi bencana dilakukan oleh Muhammadiyah setelah tsunami di Aceh pada tahun 2004 dan diperkuat setelah gempa besar di Yogyakarta pada tahun 2006. Program utamanya adalah membina Masyarakat Tangguh Bencana, Sekolah Aman Bencana, dan Rumah Sakit Aman Bencana. Pandangan positif tentang bencana, sikap ramah dengan alam berdasarkan ilmu pengetahuan. Selain itu, langkah-langkah mitigasi bencana preventif adalah temuan dari penelitian ini. Ketiga sikap ini perlu disosialisasikan kepada masyarakat Indonesia yang tinggal di daerah rawan.

Kata Kunci: Bencana; Mitigasi Bencana; Penafsiran AL-Qur'an; Muhammadiyah

## Introduction

Indonesia is in a disaster-prone area. Various disasters come alternately, ranging from erupting mountains, earthquakes, floods, landslides, fires, high waves, tsunamis, even liquefaction. Many people think that the disaster was a disaster that was not expected to come.<sup>1</sup> There are even those who think that the disaster is a punishment or punishment for sins committed by (some) people affected by the disaster. Based on this belief, efforts to avoid disaster by the community is to always do good and do not commit sins or sins. Efforts to prevent the community from disasters or efforts to reduce the number of disaster victims are not widely done.<sup>2</sup> In addition to the government, there are not many elements of society that move to make awareness of this disaster alert, one of which is Muhammadiyah. Robin Bush noted that since the Tsunami in Aceh in 2004 Muhammadiyah has become one of the most active private disaster relief agencies in Indonesia. Also involved in disaster relief Yogyakarta earthquake (2006), Sumatra earthquake (2009) and eruption of Mount Merapi (2010). Muhammadiyah's main role has led it in the international discourse on humanitarian aid.<sup>3</sup>

So far, studies on disaster mitigation tend to examine the praxis movement only by ignoring the basis of the public's view of disaster mitigation. The study of disaster mitigation views problems objectively while subjective dimensions are ignored. In line with this there are four patterns that can be mapped from the study of disaster mitigation. First, disaster mitigation of traditional communities and local

1 Zakiyuddin Baidhawiy, "The Role of Faith-Based Organization in Coping with Disaster Management and Mitigation Muhammadiyah's Experience," *Journal of Indonesian Islam* 9, no. 2 (2015): 167–194,

2 Hilman Latief, "Philanthropy and 'Muslim Citizenship' in Post-Suharto Indonesia," *Southeast Asian Studies* 5, no. 2 (2016): 269–286,

3 Robin Bush, *Muhammadiyah and Disaster Response: Innovation and Change in Humanitarian Assistance*, 2015, [http://ndl.ethernet.edu.et/bitstream/123456789/33293/1/104.Caroline Brassard.pdf#page=26](http://ndl.ethernet.edu.et/bitstream/123456789/33293/1/104.Caroline%20Brassard.pdf#page=26). most governments have yet to make a clear priority of addressing and managing risk reduction before disasters strike. According to the Annual Disaster Statistical Review 2012, in the last 10 years, the five countries most hit by natural disasters were China, the United States, the Philippines, India and Indonesia. In 2012 alone, Asia accounted for nearly 65 % of global disaster victims, with hydrological events, such as floods, storm surge and landslides, accounting for 75 % of the disasters in Asia during that year (Guha-Sapir et al. 2012

wisdom, as done by Suparmini and Indarti Komala Dewi<sup>4</sup>. Second, mitigation against various forms of disaster, as has been studied by Emilia Nurjani<sup>5</sup>, Rangga K Chandra<sup>6</sup>, Seno Adi and Wiwin Budiarti<sup>7</sup>. Third, disaster mitigation education, among others, is carried out by Enok Maryati<sup>8</sup>, Drajat Suharjo, Rikha Surtika Dewi<sup>9</sup>, and Putu Eka Suarmika.

Fourth, disaster mitigation carried out by Muhammadiyah, among others, was carried out by Putra Agina Widyaswara, Hidayati, Tomi Kurniawan, and W Puspitasari.<sup>10</sup> Of the four patterns, there are no studies that examine the subjective side of mitigation actors, namely the way actors view disaster mitigation and the implications of that perspective on real action in disaster mitigation. The purpose of this paper complements the shortcomings of previous studies by analyzing the perspective on disaster mitigation and the real implications of action on Muhammadiyah. In line with that, the researchers found three main points of the problem. First, the form of construction and reception of the Qur'anic verses carried out by Muhammadiyah. Second, the initiation model carried out by Muhammadiyah in the framework of disaster objectivation. Third, the program carried out by Muhammadiyah as a disaster internalization.

Researchers show how Muhammadiyah's mindset is positive towards disasters and disaster mitigation, which is different from the view of some negative circles. Disasters are no longer considered irreversible destinies, and disaster victims can be avoided or reduced to near nil. In line with that, this study will show the

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- 4 Indarti Komala Dewi, Yossa Istiadi, and Yossa Istiadi, "Mitigasi Bencana pada Masyarakat Tradisional dalam Menghadapi Perubahan Iklim di Kampung Naga Kecamatan Salawu Kabupaten Tasikmalaya (Disaster Mitigation on Traditional Community Against Climate Change in Kampung Naga Subdistrict Salawu Tasikmalaya)," *Jurnal Manusia dan Lingkungan* 23, no. 1 (2016): 129,
- 5 Emilya Nurjani, Arum Rahayu, and Febriyan Rachmawati, "Kajian Bencana Angin Ribut Di Indonesia Periode 1990-2011: Upaya Mitigasi Bencana," *Geomedia: Majalah Ilmiah dan Informasi Kegeografian* 11, no. 2 (2015).
- 6 Rangga K. Chandra and Rima Dewi Supriharjo, "Mitigasi Bencana Banjir Rob Di Jakarta Utara," *Jurnal Teknik Pomits* 2, no. 1 (2013): 25-30,
- 7 Wiwin Budiarti, E V I Gravitanian, and D A N Mujiyo, "Flood Mitigation Efforts in Samin Sub-Watershed through the Disaster Resilient Community Development" 18, no. 2 (2017): 241-250,
- 8 Enok Maryani, "Model Pembelajaran Mitigasi Bencana dalam Ilmu Pengetahuan Sosial di Sekolah Menengah Pertama," *Jurnal Pendidikan Geografi* 10, no. 1 (2010)
- 9 Rikha Surtika Dewi and Nadhini hudha Anggarasari, "Mitigasi Bencana Pada Anak Usia Dini," *Early Childhood : Jurnal Pendidikan* 3, no. 1 (2020): 68-77
- 10 Tomi Kurniawan Pratama et al., "Respon Mitigasi Bencana Gempa Bumi Di SMP M 7 Bayat Dan SMP MBS 2 Prambanan," *Jurnal Geografi, Edukasi dan Lingkungan (JGEL)* 4, no. 1 (2020): 39-49; Putra Agina Widyaswara Suwaryo, Sarwono Sarwono, and Podo Yuwono, "Peran Muhammadiyah Disaster Management Center Dalam Mitigasi Bencana," *Jurnal Ilmiah Permas: Jurnal Ilmiah STIKES Kendal* 10, no. 1 (2020): 33-40; Hidayati Hidayati et al., "Disaster Mitigation Training (Pelatihan Mitigasi Bencana) Untuk Anak Usia Dini Di Muhammadiyah Boarding School Sang Surya, Kota Mataram," *SELAPARANG Jurnal Pengabdian Masyarakat Berkemajuan* 3, no. 2 (2020): 2

theological roots in the form of Muhammadiyah's reception to qur'anic verses related to disaster mitigation. Research also shows the implications of Muhammadiyah's disaster mitigation praxis movement. This article is based on three arguments. First, the reception to the text of the Qur'an is unique that one another does not have to be equal depending on the experience and context<sup>11</sup>. Second, the Qur'an is a source of inspiration that can always be contextualized to be a guide to life<sup>12</sup>. Third, making changes in society starts from changing their mindset.<sup>13</sup> It same likes disaster mitigation of traditional communities and local wisdom of Baduy people in West Java have beliefs and customs that become daily rules and philosophy.<sup>14</sup>

Mitigation against various forms of disaster, including earthquakes, hurricanes, floods, landslides, and tsunamis.<sup>15</sup> Earthquake mitigation as an effort to reduce the risk of earthquake disasters needs to be done integrative and using sustainable development systems. Earthquake disaster mitigation should be taken before the occurrence of disasters including the main model concept and initial plan of earthquake mitigation management that must be implemented to reduce the risk of earthquake disaster. The Yogyakarta earthquake in 2006 was a good case study for the implementation of the earthquake management system<sup>16</sup>. Mitigation of hurricane disasters is done by spatial mapping to analyze the distribution and tendency of the location of hurricanes every year and to find out the areas in Indonesia that have the highest incidence of hurricane disasters. Disaster mitigation efforts can take precedence over these disaster-prone areas.<sup>17</sup>

Rob flood disaster mitigation in North Jakarta is done by identifying vulnerability factors that affect rob floods. These factors are then analyzed to obtain identification of hazard threat characteristics and formulate flood risk zones that are

11 Musyfiqah Khulaimah, *Perilaku Manusia Atas Nikmat Allah Dan Ketiadaannya Dalam Al- Qur'an*, Undergraduate Tesis UIN Syarif Hidayatullah Jakarta, 2018, .

12 Md Nazir Hossain and Shitangsu Kumar Paul, "Vulnerability Factors and Effectiveness of Disaster Mitigation Measures in the Bangladesh Coast," *Earth Systems and Environment* 2, no. 1 (2018): 55–65,

13 Dinda Rosanti Salsa Bela et al., *Effectiveness of Disaster Mitigation Information by National Disaster Relief Agency in Indonesia*, *Lecture Notes in Networks and Systems*, vol. 319 (Springer International Publishing, 2022),

14 Dewi, Istiadi, and Istiadi, "Mitigasi Bencana pada Masyarakat Tradisional dalam Menghadapi Perubahan Iklim di Kampung Naga Kecamatan Salawu Kabupaten Tasikmalaya (Disaster Mitigation on Traditional Community Against Climate Change in Kampong Naga Subdistrict Salawu Tasikmalaya)."

15 Budiarti, Gravitiani, and Mujiyo, "Flood Mitigation Efforts in Samin Sub-Watershed through the Disaster Resilient Community Development."

16 Adi Seno, "Karakterisasi Bencana Banjir Bandang Di Indonesia," *Jurnal Sains dan Teknologi Indonesia* 15, no. 1 (2013): 42–51

17 Nurjani, Rahayu, and Rachmawati, "Kajian Bencana Angin Ribut Di Indonesia Periode 1990-2011: Upaya Mitigasi Bencana."

affected by hazard and vulnerability threats. From research conducted by Rangga K Chandra<sup>18</sup>, obtained a rob flood risk map that is classified into 5 classes or hierarchy based on rob flood risk is very high to less risky. In addition to rob floods, there are also flash floods. Flash floods are triggered by extreme rain intensity. Flash floods are characterized by high flow speeds by carrying mud, wood, and rocks. To overcome flash flood disasters, several mitigation actions can be done by mapping hazard areas, early warning systems, community preparedness and hydrometeorological forecasting<sup>19</sup>. Mapping potential levels of flood insecurity can be done using Geographic Information System (SIG) technology with a map-overlay approach and scoring several maps of flood parameters (slope, soil type, drainage density, rainfall, and land use) and interview surveys to find out mitigation efforts. The results of flood disaster insecurity maps can be a recommendation in disaster mitigation-based spatial planning. Disaster resilient community development is carried out through institutional preparation and preparedness of both the relevant government and disaster-prone communities, infrastructure preparation in the form of permanent levee repairs, and environmental improvements in the form of planting 'bamboo' conservation plants on the river border.<sup>20</sup>

The information should be disseminated to the public as a disaster mitigation early warning system. Mapping can be done by clustering or by identifying buildings based on the level of risk to landslide disasters (Fakhriza Nabila Hamidah, Amni Zarkasyi Rahman).<sup>21</sup> Mapping landslide disaster mitigation also needs to be done using remote sensing technology<sup>22</sup>. Tsunami disaster mitigation is done by analyzing tsunami inundation zones and their implications related to disaster mitigation activities. By using a Geographic Information System (SIG) with a cost distance approach to model tsunami disasters, spatial and network analysts can be used to analyze the level of danger, vulnerability and risk of tsunami disasters and the determination of evacuation routes.<sup>23</sup>

Disaster mitigation education is carried out in formal and non-formal educational institutions (Enok Maryani, Drajat Suhardjo, Rikha Surtika Dewi,

18 Chandra and Supriharjo, "Mitigasi Bencana Banjir Rob Di Jakarta Utara."

19 Adi Seno, "Karakterisasi Bencana Banjir Bandang Di Indonesia."

20 Budiarti, Gravitiani, and Mujiyo, "Flood Mitigation Efforts in Samin Sub-Watershed through the Disaster Resilient Community Development."

21 Fakhryza Nabila Hamida and Hasti Widiasamratri, "Risiko Kawasan Longsor Dalam Upaya Mitigasi Bencana Menggunakan Sistem Informasi Geografis," *Pondasi* 24, no. 1 (2019): 67

22 Ying Li et al., "Undesirable Epsilon-Based Model DEA Application for Chinese Natural Disaster Mitigation Efficiency," *SAGE Open* 11, no. 3 (2021)

23 Rahmat Aris Pratomo and Iwan Rudiarto, "Permodelan Tsunami Dan Implikasinya Terhadap Mitigasi Bencana Di Kota Palu," *Jurnal Pembangunan Wilayah & Kota* 9, no. 2 (2013): 174

Putu Eka Suarmika).<sup>24</sup> Disaster mitigation management requires a good 'Disaster Information System'. Among them, it contains health elements needed during disasters including nearby health services around events, available human resources, infrastructure facilities, program handlers, and referral systems. This system is needed to facilitate in coordinating the handling of victims (Raudya Dimas Wicaksono, Burhanuddin Muhammad, Etika Emaliyawati).<sup>25</sup>

Muhammadiyah's role in flood disaster management is also seen in three aspects, namely, preparedness, emergency response and post-disaster rehabilitation such as research conducted by Hardianto Hawing in Makassar. Various training for disaster mitigation is also carried out in various schools so that teachers and students have knowledge and understanding of disasters, so as to have steps in dealing with disasters through the stages before the time and after the disaster, such as research conducted by Hidayati, Tomi Kurniawan Pratama, Windy Puspitasari Dian Aditya and Dhi Bramastya.<sup>26</sup> However, according to research Firda Nur Fatta shows that infrastructure facilities support school preparedness. In this case, Muhammadiyah Cawas Junior High School Klaten district against earthquake disaster is still not ready when viewed from the average structural parameters of the school.<sup>27</sup>

Theologically, Muhammadiyah views disasters positively. Therefore, Muhammadiyah established Muhammadiyah Disaster Management Center (MDMC) for the implementation of disaster relief and recovery initiatives. Muhammadiyah's work is guided by five principles, namely al-Ma'un theology, the principle of universal humanism, mutual recognition and understanding (*ta'aruf*), cooperation (*ta'awun*) and the fulfillment of survivors' rights. Muhammadiyah provides assistance to all victims and survivors in a non-discriminatory way. (Zakiyuddin Baidhawi, Y.A Hilman)<sup>28</sup>. Muhammadiyah also performs reconstruction of classical Islamic jurisprudence that regulates various rules of worship by performing various

24 Maryani, "Model Pembelajaran Mitigasi Bencana dalam Ilmu Pengetahuan Sosial di Sekolah Menengah Pertama"; Dewi and Anggarasari, "Mitigasi Bencana Pada Anak Usia Dini."

25 Suwaryo, Sarwono, and Yuwono, "Peran Muhammadiyah Disaster Management Center Dalam Mitigasi Bencana."

26 Hidayati et al., "Disaster Mitigation Training (Pelatihan Mitigasi Bencana) Untuk Anak Usia Dini Di Muhammadiyah Boarding School Sang Surya, Kota Mataram"; Kurniawan Pratama et al., "Respon Mitigasi Bencana Gempa Bumi Di SMP M 7 Bayat Dan SMP MBS 2 Prambanan"; Windy Puspitasari, "Peran Ekstrakurikuler Dalam Penanggulangan Bencana Di SMK Muhammadiyah 1 Wedi Dan 2 Wedi Kabupaten Klaten," *JPG (Jurnal Pendidikan Geografi)* 6, no. 2 (2020): 39–49,

27 Firda Nur Fatta et al., "Kajian Sarana Prasarana Pendukung Kesiapsiagaan Sekolah Terhadap Bencana Gempabumi Di Smp Muhammadiyah 3 Cawas," *JPIG (Jurnal Pendidikan dan Ilmu Geografi)* 5, no. 1 (2020): 56–66,

28 Baidhawi, "The Role of Faith-Based Organization in Coping with Disaster Management and Mitigation Muhammadiyah's Experience."

ijtihad to facilitate worship in disaster emergencies.

This study is qualitative research with two approaches, namely living Qur'an. The study of living Qur'an in this study is used to examine the form of reception and response to the qur'anic text conducted by Muhammadiyah disaster Management Center (MDMC) in disaster mitigation. Reception exegesis is concerned with the act of interpreting; Aesthetic reception means the act of perceiving the Qur'an and hadith through aesthetic means, and a functional reception is treating the texts of the Qur'an and hadith for practical purposes and benefiting from the hadith text.

Phenomenological studies seek to photograph social phenomena, namely how MDMC responds to disasters, especially mitigation aspects. The method used is a qualitative method with a interpretive-interpretive approach. By using qualitative method, researcher try in the form of circulars, information, reports on the implementation of MDMC programs, guidelines, and so on. Researchers also dig into data through sources that have a direct relationship with research materials with interview, observation, and data collection techniques. Based on the data collected, researchers conduct an interactive analysis model (interactive model of analysis) that has three stages, namely data reduction (data reduction), presentation of data (data display), and conclusion withdrawal (conclusion).

### **Reception: Construction of Muhammadiyah's Perspective on Disaster Mitigation**

As an organization sourced in the text of Al-Quran, Muhammadiyah is always associated with the verses of the Qur'an and the prophet's Nash hadith. Many various activities related to preventive measures against disasters are based on his acceptance and understanding of the text of the Qur'an and sunnah. The reception of the Qur'an affects the way it views preventive measures and will also affect its praxis. There are two categories of preventive measures in the context of disasters according to Muhammadiyah. First, understand causality, which is to fully understand why a disaster occurs. Second, understanding this role as caliph in regulating the universe (Majlis Tarjih, p. 633). The need to understand the cause of earthquakes is implicitly instructed by Allah in the Qur'an to reflect on events taking place in the universe and use reason scientifically. The verse chosen by Muhammadiyah for the understanding of the first category is from QS. az-Zumar (39): 9; QS. an-Naml (27):88; dan QS. Ghafir (40):21.

This verse explains that it is not the same between people who have knowledge and those who have no knowledge and states that only healthy people can receive lessons. This verse is used to refute the reality that occurs in some societies over belief

systems that prevent humans from understanding the science that has developed. So that if the belief system develops in a certain society, then the potential for disaster will be even greater. For its opinion that various natural events such as volcanic eruptions, earthquakes, tsunamis, floods, flash floods, landslides, tornadoes or hurricanes are natural events that occur as natural processes. This verse is also a suggestion that humans reflect on and study the universe. Natural disasters although it cannot be known exactly when they occur, but the initial symptoms can be recognized among others with the help of technological sophistication. Thus, it can be done to prepare for disasters, including, preparation before the occurrence of disasters, when disasters occur, and after disasters. In QS Ghafir (40):21:

Dan apakah mereka tidak mengadakan perjalanan di bumi, lalu memperhatikan bagaimana kesudahan orang-orang yang sebelum mereka? Orang-orang itu lebih hebat kekuatannya daripada mereka dan (lebih banyak) peninggalan-peninggalan (peradaban)nya di bumi, tetapi Allah mengazab mereka karena dosa-dosanya. Dan tidak akan ada sesuatu pun yang melindungi mereka dari (azab) Allah.

And have they not traveled on the earth, and noticed the end of those who were before them? They were more powerful than they were and more of his relics on earth, but Allah punished them for his sins. And there will be nothing to protect them from Allah. QS Ghafir (40):21. This verse speaks of the importance of events in the past to be used as a lesson. In relation to disasters, almost all disaster events are repeated events in a region. A community of people will continue to be victims of disasters because they do not have enough will and ability to learn from past events. This verse recommends always taking wisdom and learning from past events including disaster events.

As for the second category of preventive measures in the context of disasters, namely understanding his role as caliph in regulating the universe, the verse used is QS. az-Zumar (39):18; QS. al-Hashim (59:18); QS. Al-Ahzab (33:72); and QS. al-Qasas (28:77). These verses are used as the basis of the argument that man is appointed caliph on the face of the earth with the intellect to think. This ability to think makes humans have the ability to understand science with which humans can identify, decipher, and provide solutions to various problems in this world. God has entrusted man to manage and utilize nature and its resources in accordance with His provisions. However, humans with their bad tempers sometimes with their exploitative behavior have created damage in various places.

Preventive action to reduce the risk of disaster according to Muhammadiyah in accordance with the spirit of Islam and based on the word of Allah QS. Yusuf, verses 47-49.



He (Yusuf) said, “That you may plant seven years (in a row) as usual; Then what you reap, let you leave on the stalk except for a little for you to eat. (QS. Yusuf, Verse 47)

Then then there will come seven very difficult years, which spend what you save to deal with it, except for a little of what you keep. (QS. Yusuf, Verse 48)

After that will come the year, in which men are given rain and, in those days, they squeeze (wine).” (QS. Yusuf, Verse 49)

The above story tells about the events that occurred in the time of the prophet Yusuf AS where the apostle of Allah proposed to the community to apply a pattern of frugal living and saving. According to Muhammadiyah, the verse provides a valuable lesson from the events of the past. When a potential disaster has been identified, all that must be done is preparedness efforts. Thus, according to Muhammadiyah the disaster will be preventable or at least minimized the impact. Participatory approach by involving community participation in preventing the occurrence of this disaster according to Muhammadiyah is appropriate and based on the word of Allah QS. al-Maidah verse 2:

“And help each other you in righteousness and piety, and do not help you in sin and hostility. Be afraid of God, indeed, God is severe in retribute. (QS Al-Ma’idah, Verse 2)

These verses serve as the basis for Muhammadiyah in carrying out various disaster mitigation activities as stated in that Conference. Although it was only decided in 2015, the spirit of these verses has emerged, lived, and became a spirit for Muhammadiyah in the early days of dabbling in disaster mitigation. The Tarjih Council then formulated it and compiled it into a comprehensive guideline through a series of seminars, discussions, studies, and so on which then led to the determination of disaster jurisprudent in the Tarjih National Conference. Tarjih deliberation is a forum within Muhammadiyah that is authorized to discuss and make decisions on matters related to religious issues. The national Tarjih deliberations are organized by the Tarjih Council and the central Tajdid followed by members of the Muhammadiyah Center leadership, members of the central level Tarjih council, envoys of the regional level Tarjih council and scholars / scholars who are considered necessary. In the organizational mechanism, the national deliberation decision of tarjih needs to get approval from the Muhammadiyah Central Leadership in the form of Tanfidz. Tanfidz verdict of tarjih National Deliberation on Fiqih Disaster is contained in Muhammadiyah PP Decree number 102 / KEP / I.0 / B / 2015. In the verdict was also ordered to the Tarjih and Tajdid councils to socialize and guide the disaster

## **Initiation of Muhammadiyah Disaster Mitigation**

On December 26, 2004, a massive tsunami devastated the Aceh mainland by 100 meters and destroyed everything in the path of the tsunami. Nearly 200,000 people were killed. Destruction is seen everywhere. This condition has invited concern and solidarity to ease the burden from all corners of Indonesia and even the world. Responding to the Aceh Tsunami, the Muhammadiyah Central Leadership formed the Muhammadiyah Committee for Aceh recovery (KMPA). This committee is tasked with conducting emergency response and recovery activities after the tsunami as well as fundraising and distributing aid. Since then, Muhammadiyah has been involved in various disaster management, mitigation, and preparedness activities in a systemic, organized, and permanent manner. A big disaster is happening again in Indonesia. On May 26, 2006, there was an earthquake in Yogyakarta that killed more than 10 thousand people. This further strengthens Muhammadiyah's spirit to be directly involved in handling disasters more seriously and permanently and no longer only involved in adhoc. In 2007, the Head of Muhammadiyah Center established a Disaster Management Center with Decree no. 58 / KEP / I.0 / 2007 with chairman Dr. H.M. Natsir Nugroho, Sp. OG, M. Kes. This formation is based on the internal recommendations of the 45th Muhammadiyah Conference Decision in 2005. Since then, Muhammadiyah has always been involved in disasters in Indonesia, even has begun to penetrate into foreign countries. This Disaster Management Center was later changed to a Disaster Management Agency and later became more popular with its name in English, namely 'Muhammadiyah Disaster Management Center' (MDMC). In its development, MDMC currently has five divisions, namely: Organization and Leadership; Education and Training; Networking and Cooperation; Emergency Response and Reconstruction Rehabilitation, Disaster Risk Reduction and Preparedness.

Disaster mitigation is an action at the pre-disaster stage whose purpose is to minimize the impact caused by a disaster. The main objectives of disaster mitigation are to: 1) Prevent loss of life; 2) Reduce suffering; 3) Provide information about disaster risks; 4) Reduce damage to infrastructure, property, and economic resources. Disaster mitigation efforts can be done with structural and non-structural approaches. The structural approach is carried out by risk reduction efforts through physical development and technical engineering of disaster-resistant buildings. The non-structural approach is a risk reduction effort by avoiding disaster areas through spatial and regional planning, land use, insurance schemes, incentives, and various ways to increase awareness and concern for disaster risk through education, training, and

dissemination of information.<sup>29</sup>

Participatory approach in the process of planning, conservation, and preparedness in disaster mitigation is very important according to Muhammadiyah. Disaster mitigation must have three main elements, namely hazard assessment, warning, and preparation. First, hazard assessment; This is necessary to identify threatened populations and assets, as well as the threat level. Second, warnings; It is necessary to warn the public about the dangers that will threaten. Warnings against disasters that would threaten must be from a reliable source or from an authorized one. Third, preparation or preparedness, such as when to evacuate, when to return, and when to move locations. In addition, about spatial planning that places public facilities and social facilities outside disaster danger zones and building safe infrastructure. These three things need to be supported by the dissemination of information and increased public awareness of the importance of disaster risk reduction through education to the wider community about the threat of disasters. Likewise, community involvement in planning in critical disaster and environmental areas and community-based disaster risk reduction actions.<sup>30</sup>

### **Muhammadiyah Disaster Mitigation Program**

According to the MDMC report based on the 2013 disaster risk index issued by the National Disaster Management Agency (BNPB), 205 million Indonesians have a risk of disaster. The population of that number lives in 388 districts / cities or 80% of the total number of districts / cities in Indonesia. While the remaining 109 districts / cities have a moderate class risk.<sup>31</sup> The spread of high-risk areas is clustered with the spread of Muhammadiyah network throughout Indonesia. In 2019 Muhammadiyah has regional administrators in all 34 provinces or 100% of all provinces. Muhammadiyah also has 461 district / city administrators from 476 districts in Indonesia or equivalent to 97% of the number of districts / cities in Indonesia. While at the sub-district level, Muhammadiyah organization has formed administrators in 3,850 sub-districts from 6,039 sub-districts throughout Indonesia, or 63.7% of all sub-districts in Indonesia. This objective condition according to Muhammadiyah Disaster Management Center has two meanings. First, Muhammadiyah network is ready to be mobilized to strengthen disaster management systems throughout the

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29 Hossain and Paul, "Vulnerability Factors and Effectiveness of Disaster Mitigation Measures in the Bangladesh Coast."

30 Imtiyaz A. Parvez et al., "Neo-Deterministic Seismic Hazard Scenarios for India—a Preventive Tool for Disaster Mitigation," *Journal of Seismology* 21, no. 6 (2017): 1559–1575,

31 Nurjani, Rahayu, and Rachmawati, "Kajian Bencana Angin Ribut Di Indonesia Periode 1990-2011: Upaya Mitigasi Bencana."

region. Second, Muhammadiyah network is also a threatened part of disasters in all regions in Indonesia.

In conducting disaster mitigation, there are three types of programs carried out by Muhammadiyah. First, improve the quality and quantity of education and training of disaster management volunteers. Second, the implementation of disaster mitigation programs in the form of “safe community” stakeholder integration. Third, disaster mitigation and preparedness campaigns. Each field with several sub-fields, and each sub-field with several activities. In the first field is carried out with five sub-programs, namely: 1. Volunteer training. 2. Establishment of Study Center and Study Program at Muhammadiyah College. 3. Strengthening humanitarian logistics warehouses. 4. Synergy of volunteers with Muhammadiyah Business Charity (School, College, Hospital, *Lazismu*, etc.). 5. Establishment of Competency Test Center of disaster management volunteers. As for the second field, disaster mitigation programs, including six programs, namely: 1. Facilitator training. 2. Disaster Safe School. 3. Disaster Safe Hospital. 4. Disaster Resilient Society. 5. Policy Advocacy on Disaster Risk Reduction. As for the third field, disaster mitigation campaigns, carried out with 3 programs, namely: 1. Student Movement Intervene. 2. Campaign through social media. 3. Seminars.<sup>32</sup>

According to the Muhammadiyah Disaster Mitigation Program Report Book in 2020, Muhammadiyah already has Disaster Studies Centers in 6 Universities, namely UAD, UMY, Unisa Yogyakarta, UM Malang, UM Surakarta, and UM Bengkulu: as well as two disaster study programs, namely S1 in UM Aceh, and S2 in UM Jakarta. There are also 9 PKU hospitals that have been designated as pilot hospitals for disaster management. Disaster Safe School Program runs from paud level to college. The Disaster Safe School Program in collaboration with Lazismu is named Smart School in Central Java, East Java, Maluku, and DIY. The Disaster Resilient Community Program is carried out independently by Muhammadiyah level 2 (PDM) and sub-district level (PCM) by involving KKN (Real Work Lectures) students from various Muhammadiyah Universities. Social media campaigns are conducted through Facebook, twitter, Instagram, and YouTube timelines, with MDMC Indonesia account.<sup>33</sup>

32 Suwaryo, Sarwono, and Yuwono, “Peran Muhammadiyah Disaster Management Center Dalam Mitigasi Bencana.

33 Puspitasari, “Peran Ekstrakurikuler Dalam Penanggulangan Bencana Di SMK Muhammadiyah 1 Wedi Dan 2 Wedi Kabupaten Klaten.”

## Cultural Values of Internalization of Disaster Mitigation

Based on three Quranic reception patterns, Muhammadiyah in the case of disaster mitigation only looks one kind of reception. The exegesis reception shows the choice of verses and interpretations that look positively at disasters and encourage active behavior to prepare for the disaster. Natural disasters according to Muhammadiyah is a common natural event that has occurred since ancient times, now, and will continue to occur until anytime. Therefore, natural disasters are not seen as doom, reinforcements, or other negative views. This is what then encourages Muhammadiyah through its organ MDMC (Muhammadiyah Disaster management Centre) to mobilize its potential to hold programs and organize various disaster mitigation activities. Muhammadiyah's disaster mitigation program, among others, is focused on creating disaster safe education units, disaster safe hospitals, disaster resilient communities, and preparing disaster management volunteers who are trained, reliable, and qualified.

The choice of Muhammadiyah interpretation that views positively on this disaster is in line with Muhammadiyah identity as a modern and advanced movement. Islam is a religious value that can build a major civilization and become a blessing for the universe. There are three important characteristics of Islam that continue, namely rationalism, pragmatism, and vernacularism. Rationalism is characterized by an open, critical, and dialectical spirit. Pragmatism is characterized by the courage to receive kindness from various sources. Vernacularism is characterized by creating new habits that are useful for life as a tradition. (Dina Rafidiyah, Implementation of Islamic values continues...).<sup>34</sup> A positive view of disasters is the implementation of the belief in the moeslem human duty to build a major civilization and be a blessing to the universe. The characteristics of his rationalism are characterized by his open attitude to science related to disaster. His pragmatism characteristics are characterized by his willingness to imitate, imitate and cooperate with others in disaster mitigation. And the characteristic of vernacularism is characterized by creating a variety of permanent programs for the long term in the framework of disaster mitigation in the community.

The disaster mitigation program carried out massively by Muhammadiyah as an objectification and contextualization of the values of the Quran formulated in disaster fiction fosters new values and strengthens the relevant old values. In the process of internalizing cultural values found several values related to disaster mitigation.

1. A positive view of disasters and disasters. Disaster is no longer seen as a

<sup>34</sup> Arun Jotshi, Qiang Gong, and Rajan Batta, "Dispatching and Routing Vehicles in Disaster Mitigation Using Data Fushion," *Socio-Economic Planning-Sciences*, no. 43 (2009): 1-24,

punishment for sins committed by man, or the anger of the subtle spirit of not being noticed by man. However, disasters are seen because of the law of causality based on science. Indonesia's position is geographically vulnerable to various natural disasters. Therefore, mitigation is also derived from science, not by offering to dampen the anger of the earth's guardian spirit. This is seen in disaster volunteer training activities, the formation of resilient villages, disaster safe schools, disaster safe hospitals, and so on that are guided based on science.

2. Humans are friendly with nature. Nature is man's friend. Natural events will come in turn that last from ancient times, until now, and will continue to take place. Natural events including earthquakes, erupting mountains, floods, landslides, tornadoes, and so on never kill. However, it was ignorance and man that caused him to be killed. Knowledge and care can save people from disaster. For example, about earthquakes. People who have knowledge of the earthquake will know the sign so that early on have anticipated so that they can avoid the ruins. But people who do not have knowledge of earthquakes even he is not aware when there is a shock, so it does not immediately respond and only move away after many collapses. A late response will cause panic because the normal mind does not run. If you do not know the number of many then there will be mass panic (chaos). Ignorance also causes confusion so that trusting issues and predictions that usually develop along with the emergence of disasters. While ignorance causes indifference so that doing things that can be dangerous when disasters occur, for example, building buildings with construction can't withstand earthquakes, penetrate areas that should not be inhabited and so on. Being friendly with nature is an important part of disaster mitigation and a new value.
3. Preventive measures by preparing disaster safe education units, disaster safe hospitals, and disaster resilient communities provide new cultural value that disasters can occur at any time, but the loss of life and material must be prevented early on. Construction of buildings and physical facilities considers geographically safe locations from disasters such as floods, landslides, tsunamis; its construction must also be strong and safe from earthquakes, floods, tornadoes, and so on; Socially the community also prepares procedures and safe measures to deal with disasters. Various simulations and briefings on disasters continue to be conducted. Ready to be on standby and anticipation before the event becomes a new culture in society for the prevention of fatalities and material.

The massive disaster mitigation program in Muhammadiyah has succeeded in changing the passive and apathetic and even negative culture towards disasters into active, caring, and positive to disasters. This starts with changing the way we look at disasters. Passive and uncaring attitude is caused by having no knowledge of disasters and not understanding the instructions of the Qur'anic text that guides it. After the Tarjih and Tajdid councils of Muhammadiyah central leaders conducted an intensive study on disasters in integration and interconnection and produced a playbook on disaster fikih, the perspective of Muhammadiyah citizens and Muslims gradually changed. This change in perspective has become increasingly rapid along with the socialization of disaster fikih carried out by Tarjih Council and Tabligh Council in collaboration with other councils and institutions, organizations, and business charities. Moreover, when MDMC has begun to approve real disaster mitigation program programs in hospitals, schools, universities, and community bases at Muhammadiyah branch level or community citizens in general.

A positive perspective on disaster mitigation as Muhammadiyah understands it needs to be socialized intensively to all Indonesians who 80% live in high disaster-prone areas. Muhammadiyah's work in carrying out disaster mitigation movements can be used as a model for disaster risk reduction programs in Indonesia. Therefore, disaster mitigation campaigns are needed for all Indonesian people. In addition to being a government task, civil society can also take part in disaster mitigation campaigns. Civil society and government can also explore and revive local wisdom in each area that has been proven to have contributed to disaster mitigation.

## Conclusion

In contrast to some people in Indonesia, Muhammadiyah turns out to have a positive perspective on disasters and disaster mitigation. Humans are becoming more friendly with nature. Various natural events come alternately, earthquakes, erupting mountains, floods, landslides, tornadoes, and so on are natural events that continue to occur from time immemorial until the future. A positive perspective and science will be able to save humans from these disasters. Preventive measures with various programs for disaster mitigation, such as Disaster Resilient Communities, Disaster Safe Schools, and Disaster Safe Hospitals will be able to minimize disaster victims, both human and property. Positive perspective, friendly attitude with nature based on science, and taking preventive measures need to be socialized to become the basic attitude of Indonesian society which is mostly domiciled in disaster-prone areas.

This study uses two approaches, namely living Qur'an and phenomenology. The method of living the Qur'an through the reception of exegesis, successfully

photographed how Muhammadiyah made the Qur'an a source of reference in understanding the problem of disaster mitigation and can explain the choice of verse used and the method of understanding the verse that uses the help of science to understand it. Phenomenological approach can also be used to explain Muhammadiyah phenomenon in implementing its new understanding of disasters and disaster mitigation. The Aceh tsunami of 2004 and the Jogja earthquake in 2006 have raised new awareness of the importance of disaster risk reduction and resulted in Muhammadiyah being moved to initiate disaster mitigation and management programs. Various disaster mitigation programs that are suitable for Muhammadiyah can also be explained with this phenomenological approach.

### **Supplementary Materials**

The data presented in this study are available in [insert article or supplementary material here] (Usually the datasets were analysed from library research can be found in the whole data references )

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#### **Authors' contributions**

I did this research by myself, from preparing the materials, writing the paper, reviewing, and revising.

#### **Data availability statement**

Data sharing is not applicable to this article as no new data were created or analysed in this study.

#### **Conflict of interests**

None of the authors of this study has a financial or personal relationship with other people that could inappropriately influence or bias the content of the study.

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