Analysis of Community Preparedness in Facing Fire Disaster (Case Study of *Sekaa Teruna* Dharma Yowana, Pekutatan District, Jembrana-Bali)

Analisis Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Kebakaran (Studi Kasus Pada *Sekaa Teruna* Dharma Yowana, Kecamatan Pekutatan, Jembrana-Bali)

Ni Luh Gede Aris Maytadewi Negara[1*], Cokorda Istri Dharmayanthi[2], Dwiastutik Listiantari[3]

[*1]Fakultas Ilmu-Ilmu Kesehatan Universitas Bali Internasional
[2]Fakultas Ilmu-Ilmu Kesehatan Universitas Bali Internasional: cokistridharmayanti@iikmpbali.ac.id
[3]Rumah Sakit Gigi dan Mulut Saraswati Denpasar: dwie.listiantari@gmail.com

ABSTRACT

Background: Fire disasters are a significant risk during the dry season and prolonged drought conditions, Pekutatan is one of the sub-districts in Jembrana Regency, Bali, where most people are clove or coffee farmers. The risk of fire disasters in clove or coffee fields may occur because Bali is currently experiencing a dry season. Preparedness is an activity carried out to deal with disasters through quick and appropriate steps so that property loss and loss of life can be minimized.

Objective: This research aims to determine the community's readiness to face fire disaster.

Methods: This research is descriptive quantitative research, where data was obtained from the results of fire disaster mitigation, with a purposive sampling technique where the sample consisted of 40 people. The research result was analyzed using descriptive analysis techniques.

Results: The research results show an attitude of concern for disasters in the ready category (index value 87), emergency response plans in the ready category (index value 86), early warning systems in the ready category (index value 85), and resource mobilization in the ready category (index value 82).

Conclusion: It can be concluded that the community is ready to mitigate fire disasters.

Keywords: *fire disaster, preparedness, public.*

ABSTRAK

Latar Belakang: Kebakaran merupakan risiko yang cukup besar selama musim kemarau dan kondisi kekeringan yang berkepanjangan, Pekutatan merupakan salah satu kecamatan di Kabupaten Jembrana Bali, dimana mayoritas masyarakat sebagai petani cengkeh ataupun kopi. Risiko bencana kebakaran pada ladang cengkeh atau kopi mungkin terjadi karena saat ini Bali sedang mengalami musim kemarau. Kesiapsiagaan merupakan kegiatan yang dilakukan untuk menghadapi bencana melalui langkah yang cepat dan tepat sehingga kerugian harta benda serta korban jiwa dapat diminimalisir. **Tujuan:** Penelitian ini dilakukan untuk mengetahui kesiapan masyarakat dalam menghadapi bencana kebakaran**. Metode:** Penelitian ini merupakan penelitian deskriptif kuantitatif, dimana data diperoleh dari hasil kuesioner mitigasi bencana kebakaran yang dibagikan kepada kelompok remaja, dengan teknik purposive sampling dimana sampel berjumlah 40 orang. Hasil penelitian dianalisis dengan menggunakan teknik analisis deskriptif. **Hasil:** Hasil penelitian menunjukkan sikap kepedulian terhadap bencana dalam kategori siap (nilai indeks 87), rencana tanggap darurat dalam kategori siap (nilai indeks 86), sistem peringatan dini dalam kategori siap (nilai indeks 85), dan mobilisasi sumber daya dalam kategori siap. kategori siap (nilai indeks 82). **Kesimpulan:** masyarakat siap dalam melakukan mitigasi bencana kebakaran

Kata kunci: Bencana Kebakaran, Kesiapsiagaan, Masyarakat

INTRODUCTION

Forests and land are a complex ecological system consisting mostly of trees as support for various forms of life in the surrounding area [1]. Nowadays, forest and land fires can steal the government's attention, so the government has designated forest and land fires as one of the national disasters that require special attention from all elements of government and society. Forest and land fires occur every year in Indonesia [2]. The phenomenon of fires that occur in forests and land is one of the unplanned disasters in natural areas and areas that have been used by the community [3]. Forest and land fires that occur in several districts/cities in Indonesia vary greatly in their level of vulnerability [4].

The fire factor caused by nature is the influence of the climate in Indonesia when it enters the long dry season, heat emerges from the soil layer, causing forest and land fires [5]. In 50% of forest and land fires recorded in the world, it is not known how they started, including in Indonesia [6].

The role of preventing and controlling forest and land fires is carried out through prevention and mitigation efforts, namely all efforts, actions or activities aimed at preventing or reducing the possibility of forest fires occurring [7]. Reducing the risk of forest fires requires assessing and improving the patterns and practices of forest resource management and communities living around the forest. This must be formulated in a mitigation strategy so that the risk of forest fires is reduced [8].

Pekutatan is the easternmost sub-district in Jembrana Regency, Bali, with an area of 129.65 KM^2 [9]. Most people are clove and coffee farmers. The risk of fire disasters in clove or coffee fields can of course occur, especially now that Bali is experiencing a long dry season (June-July). The importance of disaster mitigation, especially in vulnerable communities [10], so that youth contributions are needed in disaster risk reduction programs. Several teenagers were even present in the villages to raise public awareness to wake up and look for ways to anticipate disaster risks.

Disaster risk reduction efforts in various regions of Indonesia are still lacking, in terms of both knowledge and the ability to analyze disaster risks [11]. Dangerous events can occur if the community has a level of capability that is lower than the level of threat that may occur [12]. Therefore, community preparedness in fire prevention efforts is very necessary. This effort is needed by the community to anticipate the possibility of a disaster to avoid casualties, loss of property and objects, as well as changes in the social order [13]. Therefore, measuring the level of preparedness in the community is important because it can improve safety and community response in facing disasters [11]. This preliminary research is important as a means of information on how the community is prepared to face fire disasters that occur in their environment.

METHOD

This research is research using a descriptive quantitative approach. Observational descriptive quantitative research methods are used to collect data by observing and describing the phenomena being studied without manipulating variables or testing hypotheses [14]. This research has passed the ethical test by the Bali International University Research Ethics Commission with the ethical permit certificate number 01.055/UNBI/EC/ VII/2023.

This research was conducted in one of the youth communities in Pekutatan District, which in Bali is called *Sekaa Teruna*. The number of respondents in this study was 40 people. The inclusion criteria for this study are (a) Respondents are in good health; (b) Administratively registered as a member of the Dharma Yowana youth group; (c) Willing to be a research subject until completion. The research was carried out in August 2023. The measuring tool used was a fire disaster mitigation questionnaire, which is valid and reliable questionnaire which consisted of a total of 28 question items regarding preparedness indicators which included (1) caring attitude towards disasters; (2) emergency response plan with 15 items; (3) early warning system with 4 questions; and (4) resource mobilization with 4 items. The results of the questionnaire calculations were categorized into not ready, ready, and very ready. The research results were analyzed using descriptive statistical analysis techniques.

RESULT AND DISCUSSION

Aspects of Attitudes of Concern towards Disasters

The results of research on aspects attitudes of concern towards disasters can be seen in table 1.

Table 1. Attitude of concern towards disasters

No	Interval Scores	Category	Frequency	%
1	>97	Very ready	7	18
2	70 - 97	Ready	26	65
3	<70	Not Ready	7	18
		Amount	40	100
Community Index	**87 (Ready)**			

Based on table 1, in the aspect of disaster awareness, 7 people (18%) are in the very ready category, 26 people (65%) are ready and 7 people (18%) are not ready, with a community index of 87 (ready).

The respondent's preparedness attitude can be seen from having the motivation to anticipate fires, having concern about sharing information related to potential fires, and having concern for the environment that has the potential to cause fires. Community preparedness actions are obtained from experience in dealing with disasters that are often experienced by the community [11]. Living in environmental conditions that are prone to disasters, makes a person realize the importance of being able to survive the consequences and impacts of disasters by knowing the signs of disasters, preventing disease by maintaining personal and environmental health, as well as know track the place which safe or

how to save yourself when a disaster occurs [15].

Emergency Response Plan

The results of research on aspects of emergency response plans can be seen in table 2.

Table 2. Emergency response plans

No	Interval Scores	Category	Frequency	%
1	<87	Very ready	9	23
2	78-87	Ready	22	55
3	<78	Not Ready	9	23
		Amount	40	100
Community Index	**86 (Ready)**			

Based on table 2, in the aspect of emergency response plans, 9 people (23%) are in the very ready category, 22 people (55%) are ready and 9 people (23%) are not ready, with a community index of 86 (ready).

Emergency response plans are seen from plans to respond to emergencies, evacuation plans, first aid and rescue [16]. Emergency response plans are community plans to deal with disasters, these plans include emergency response plans, evacuation plans, first aid, rescue, safety, and security, plans to fulfill basic needs, important facilities, as well as training and simulations to deal with them at any time [17].

Early Warning System

The results of research on aspects of the early warning system can be seen in table 3.

Table 3. Early warning system

No	Interval Scores	Category	Frequency	%
1	<89	Very ready	9	23
2	69-89	Ready	29	73
3	<69	Not Ready	2	5
		Amount	40	100
Community Index	**85 (Ready)**			

Based on table 3, in the aspect of the early warning system, 9 people (23%) were in the very ready category, 29 people (73%) were ready and 2 people (5%) were not ready, with a community index of 85 (ready).

The early warning system is seen from the disaster warning technology used, both traditional and modern, warning mechanisms and early warning simulations regarding fire disasters [18]. The Japanese government has included disaster education in the education curriculum from elementary to middle school levels regarding the pre-disaster, during a disaster and post-disaster stages [19]. Learning activities for disaster consists of mitigation and preparedness, learning activities when a disaster occurs is a response to emergency situations, and post-disaster learning activities focus on disaster response and recovery [20].

Resource Mobilization

The results of research on the resource mobilization aspect can be seen in table 4.

Table 4. Resource mobilization

No	Interval Scores	category	Frequency	%
1	<80	Very ready	8	20
2	64-80	Ready	28	70
3	<64	Not Ready	4	10
		Amount	40	100
Community Index		**82 (Ready)**		

Based on table 4, in the resource mobilization aspect, 8 people (20%) are in the very ready category, 28 people (70%) are ready and 4people (10%) are not ready, with a community index of 82 (ready).

Resource mobilization is seen from the quality of community resources, technical guidance related to disasters and funding for emergencies. Disaster preparedness programs, especially fire disasters, must be implemented frequently and continuously, especially regarding effective and efficient disaster mitigation and preparedness in urban communities [21].

CONCLUSION

The conclusion in this research is that the community is in the category of being ready to mitigate fire disasters. Through the results of this research, the community is expected to be able to face disasters through quick and appropriate steps so that property losses and casualties can be minimized.

The preparedness aspect is based on a caring attitude towards disasters with a ready category (index value 87), emergency response plans with a ready category (index value 86), an early warning system with a ready category (index value 85), and resource mobilization with a ready category (index value 82).

REFERENCES

1. Chazdon RL, Brancalion PHS, Laestadius L, Bennett-Curry A, Buckingham K, Kumar C, et al. When is a forest a forest? Forest concepts and definitions in the era of forest and landscape restoration. Ambio. 2016;45(5).

2. Sitorus SH, Hidayat R. Strategi Mitigasi Kebakaran Hutan Dan Lahan Melalui Pemberdayaan Masyarakat Di Sungai Pakning Kabupaten Bengkalis Provinsi Riau. In: International Conference Communication and Sosial Sciences (ICCOMSOS). 2020. p. 23–9.

3. Hoover K, Hanson LA. Wildfire Statistics. Congressional Research Service. 2021.

4. Rosit HA, Mardhotillah A, Delazenitha RA, Mutiarani S, Sulle TVC. Identifikasi Dan Mitigasi Kebakaran Hutan Dan Lahan Melalui Zonasi Wilayah Rawan Kebakaran Dengan Teknologi Geospasial. Jurnal Widya Bhumi. 2023;3(1):13–30.

5. Yuniar V, Meiliyana M, Apandi A. Strategi Badan Penanggulangan Bencana Daerah Dalam Pengendalian Kebakaran Hutan & Lahan di Kabupaten Penukal Abab Lematang Ilir Sumatera Selatan. Administrativa Jurnal Birokrasi, Kebijakan dan Pelayanan Publik. 2022;4(1):91–100.

6. Yulianti N, Kusin K, Murni E, Barbara B, Naito D, Kozan O, et al. Preleminary analysis of cause-effect on forest-peatland fires prior to 2020 in Central Kalimantan. Ecotrophic : Jurnal Ilmu Lingkungan. 2020;14(1).

7. Tanjung SHD, Desyanti D, Putra TH. Mitigasi Kebakaran Hutan Dan Lahan Di Resort I Kota Padang Wilayah Kelola Unit Pelaksana Teknis Daerah (Uptd) Kesatuan Pengelolaan Hutan Lindung (Kphl) Bukit Barisan. Strofor Journal. 2011;6(2):87–96.

8. Junaidy A, Sandhyavitri A, Yusa M. Mitigasi Bencana Kebakaran Lahan Gambut Dengan Menggunakan Metode Alat Penggali Air Insitu Dan Peran Serta Masyarakat Di Desa Rimbo Panjang, Kabupaten Kampar, Provinsi Riau. Jurnal Selodang Mayang. 2019;5(2):17–25.

9. Kecamatan Pekutatan. Website Resmi Kecamatan Pekutatan. https://pekutatan.jembranakab.go.id/. 2023.

10. Lesk C, Rowhani P, Ramankutty N. Influence of extreme weather disasters on global crop production. Nature. 2016;529:84–7.

11. Ayuningtyas D, Windiarti S, Hadi MS, Fasrini UU, Barinda S. Disaster Preparedness and Mitigation in Indonesia: A Narrative Review. Iran J Public Health. 2021;50(8):1536–46.

12. Suharini, Erni. Pembelajaran Kebencanaan Bagi Masyarakat Di Daerah Rawan Bencana Banjir Das Beringin Kota Semarang. Forum Ilmu Sosial. 2015;42(2):184–95.

13. Suharini, Erni. Analisis Sikap Tanggap Kesiapsiagaan Bencana Banjir pada Milenial Kota Semarang. In: Prosiding Seminar Nasional Pascasarjana UNNES. 2019. p. 910–4.

14. Creswell JW. Rearch Design: Qualitative, Quantitative, and Mixed Methods Approaches. SAGE; 2014.

15. Mulyadi. Ayo siaga bencana Palang Merah Remaja. Jakarta: PMI Pusat; 2006.

16. Syuryansyah S, Habibi F. The Role of Local Wisdom in Disaster Mitigation: A Systematic Literature Review (SLR) Approach. International Journal of Disaster Management. 2023;6(3):327–44.

17. Fegy Cahyani Y, Suharini E, Geografi J. Kesiapsiagaan Masyarakat dalam Menghadapi Bencana Kebakaran di Kampung Pelangi Kota Semarang Tahun 2020 Info Artikel [Internet]. Vol. 9, Edu Geography. 2021. Available from: http://journal.unnes.ac.id/sju/index.php/edugeo

18. Suryadi T, Zulfan Z, Kulsum K. The Relationship between Knowledge and Attitudes about Community Disaster Preparedness in Lambung Village, Banda Aceh. International Journal of Disaster Management. 2021;4(1):1–10.

19. Harianto JW, Nuntaboot K. Exploring problems and needs in disaster preparedness: a qualitative study. Jurnal Ners. 2023;18(3):212–9.

20. Clements BW. Disasters and public health: Planning and response. In Amsterdam: Elsevier; 2009.

21. Biomi AA, Gusti I, Haryawan A, Made N, Ningrat N. Kajian Kesiapsiagaan Keluarga Dalam Mengantisipasi Bencana Kebakaran Di Banjar Maniksaga Denpasar. 2018.