

Optimization of the Natural Disaster Mitigation Website (Gancana) as a Medium for Disaster Mitigation Socialization to Improve Preparedness of the Aceh Community

Muhammad Kautsar¹, Farouq Ahmed Ashim²

¹Institute of Home Affairs Governance, Indonesia

²Sabratha University, Libya

kautsar.ktsr08@gmail.com¹, 12farahim7@gmail.com²

Abstract:

This study aims to evaluate the effectiveness of the "GANCANA" website platform in disseminating information and education on disaster mitigation to the Aceh community and to identify barriers in empowering the community through this platform. The research method used is descriptive qualitative, providing a comprehensive overview of the use of the "GANCANA" website as a medium for disaster mitigation socialization in Aceh. Data were collected through literature review and direct observation of the characteristics of the "GANCANA" website and how the Aceh community accesses and utilizes it. The results of the study show that the use of information technology in disaster mitigation has been previously identified, but this research emphasizes the use of the "GANCANA" website in Aceh. The importance of integrated disaster risk communication in disaster management is also highlighted, as well as the role of socialization in shaping the understanding and behavior of the community in facing disasters. Disaster mitigation is carried out through both structural and non-structural approaches, including physical infrastructure development and socialization approaches. This study contributes to understanding the optimization of the "GANCANA" website as a tool for disaster mitigation socialization in Aceh.

Keywords: Mitigation; Disaster; Website; Preparedness

1. Introduction

This article discusses the need to enhance awareness and preparedness among communities in Aceh regarding natural disasters, as well as the role that innovative projects such as the "GANCANA" website can play. GANCANA is considered to have the potential as an effective analytical tool to assist communities in understanding diseases, including cancer, and other potential illnesses.

Furthermore, the GANCANA website can also help in forming strong community networks to increase awareness of disaster mitigation. Studies indicate that collaboration between residents and local communities can enhance community capacity in disaster response. The article also highlights the importance of understanding the role of local culture in disaster mitigation efforts, as well as the need to tailor empowerment through the GANCANA website to prevailing cultural values. Active participation of the community is considered crucial to the success of disaster mitigation, and this platform is described as a means that enables individuals to participate in risk mitigation efforts. Evaluation of the GANCANA website is conducted to assess the effectiveness of community empowerment through this platform. In efforts to optimize GANCANA as a tool for disaster mitigation socialization, plans are underway to develop an interactive and informative platform, including interactive maps, educational videos, and discussion forums.

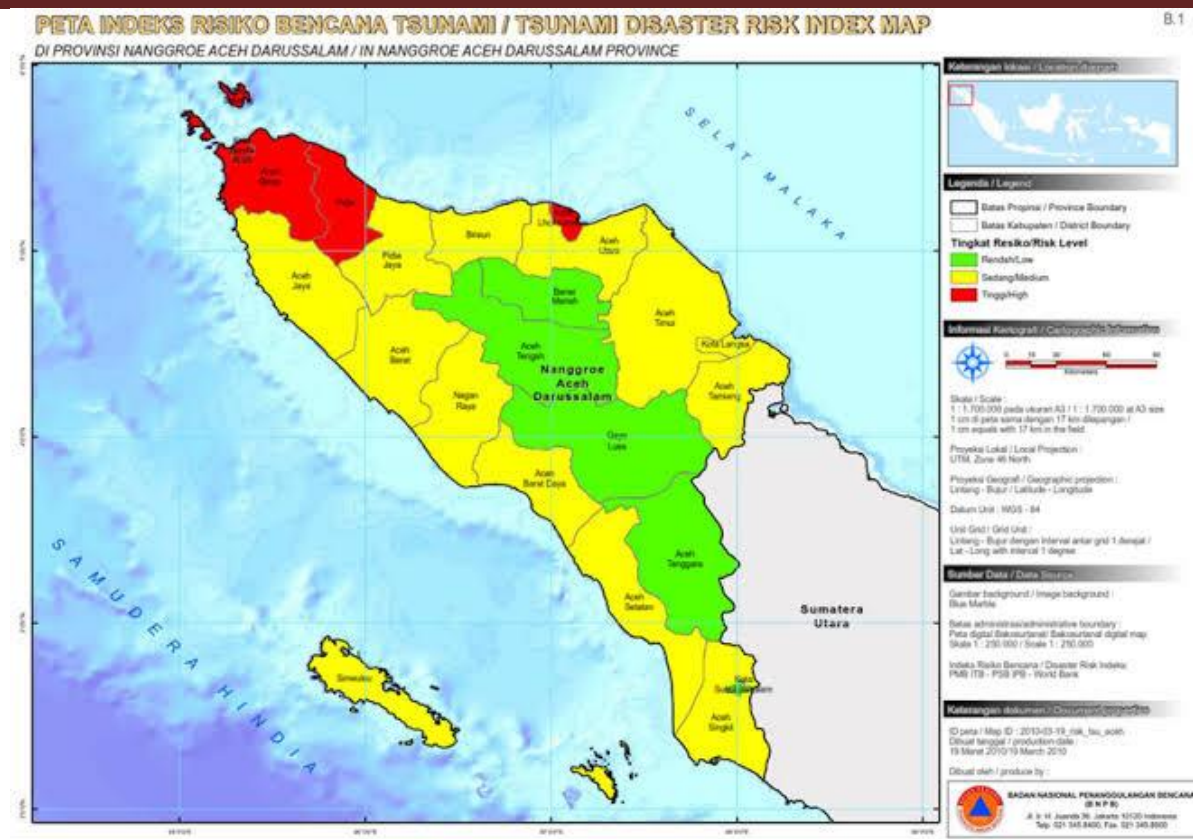


Figure 1. Tsunami Disaster Risk Index Map

The commitment is also given to present content that is easily accessible in various languages and formats, thus making it reachable by all layers of society. The hope is that this article can serve as a guide for further development of the GANCANA website as a disaster reduction service tool. In this digital era, information and communication technology, particularly this platform, is considered an effective tool in disseminating information, providing education, and mobilizing communities in disaster mitigation efforts. The objectives of this research are:

1. To evaluate the effectiveness of the GANCANA web platform in disseminating information and education on disaster mitigation to the Aceh community.
2. To identify obstacles in empowering communities through the GANCANA web platform to enhance and optimize its use in disaster mitigation in Aceh.

Academic optimization is the process of achieving the best results in education and research. This process involves various strategies, methods, and techniques aimed at enhancing performance and achievement. Its main objective is to maximize the potential of individuals or systems in achieving specific targets, such as improving understanding and skills. Academic optimization may involve the use of educational technology, curriculum development, innovative learning strategies, and appropriate evaluation tools to measure progress.

1. Socialization

Socialization is the process by which individuals learn and internalize norms, values, culture, and behavior accepted in society. This process involves interaction with family, friends, school, and media, shaping individuals' understanding of social behavior. Socialization plays a role in the development of social identity, understanding of norms and values, social skills, and strengthening social relationships. Socialization is also important for maintaining social stability and cohesion.

2. Mitigation

The approach to disaster mitigation can be divided into structural and non-structural. Structural approaches involve the construction of physical infrastructure and technology, such as disaster detection tools. Non-structural approaches involve policies and community participation, such as laws and community activities. Mitigation principles include understanding disaster prediction, alignment of perceptions between government and society, preventive efforts, and integrated coordination.

3. Preparedness

Academic preparedness involves preparation and planning to face emergency situations. This includes developing action plans, training, improving infrastructure, and organizing resources. In the education context, preparedness includes emergency planning, staff training, community involvement, resource procurement, and crisis communication. Preparedness is crucial for disaster-prone areas, such as in Aceh.

2. Research Method

This study is a qualitative descriptive research aiming to provide a comprehensive overview of the optimization of the "Gancana" website as a medium for disaster mitigation socialization, focusing on enhancing the preparedness of the Aceh community. The research describes the characteristics of the "Gancana" website, the content presented, and how the Aceh community utilizes the platform to obtain information related to disaster mitigation. Data collection was conducted through literature studies by reviewing research journals, books, articles, disaster reports, and local government policies related to disaster mitigation and social media, aiming to obtain a strong theoretical foundation regarding the optimization of social media for disaster mitigation socialization and understanding the preparedness of the Aceh community for disasters. Additionally, observations were made by directly observing the characteristics of the "Gancana" website, including its content, features, ease of use, and how the Aceh community accesses and uses the platform to obtain disaster mitigation information. The research location focuses on the Aceh Province, as explained by Hamid Darmadi and Wiratna Sujarweni, because understanding the research location is crucial for influencing the research outcomes and interpretations. By determining the appropriate location, researchers can gather relevant and in-depth data and identify solutions suitable for the specific context under study.

3. Results and Discussion

Based on the literature review conducted, the author identified studies related to the use of information technology in efforts to heal the trauma of disaster victims post-incident (Komalasari, 2020). This research has a different focus related to the issue of women's representation in the political context. The study conducted by the author is an extension of several previous studies. However, the main difference of this research lies in its emphasis on the issues to be discussed. Below are presented some previous studies relevant to this research.

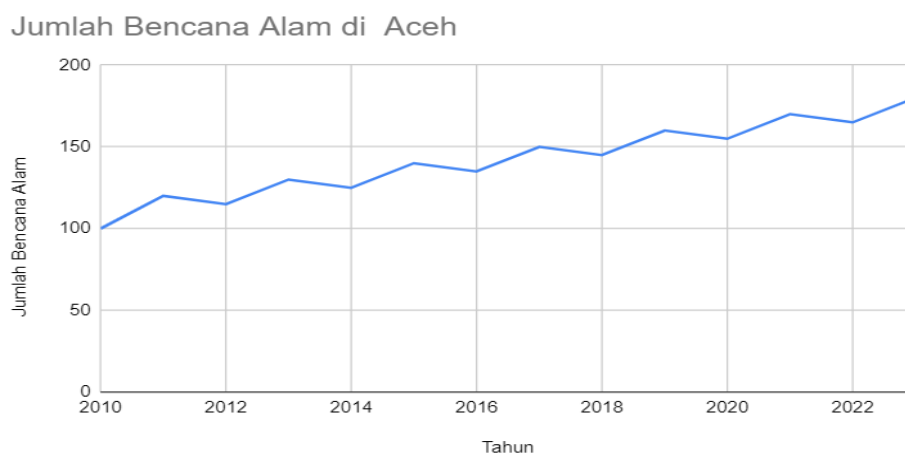


Figure 2. Number of natural disasters from 2010 to 2022 in Aceh Province

Optimization in an academic context refers to the process or effort to achieve the best or most efficient outcomes in education and research (Surya et al., 2024). It involves the use of strategies, methods, and techniques designed to enhance performance, achievement, or effectiveness in an academic context. The goal is to maximize the potential of individuals or educational and research systems in achieving specific objectives, such as increasing understanding, improving skills, enhancing academic performance, or achieving better research outcomes. Nurdyansyah (2016) argued that academic optimization can involve various approaches, including the use of educational technology, the development of curriculum tailored to student needs, innovative teaching strategies, and the use of appropriate evaluation and measurement tools to assess progress and achievement.

The importance of optimizing integrated disaster risk communication in disaster management cannot be overstated. Synergy among stakeholders, including mass media and communities, is crucial in disseminating information through various available media. All parties, from decision-makers at the central and regional levels of government, disaster experts, to the general public, are expected to enhance their communication efforts to make disaster management a top priority in national development. This is key to ensuring effective disaster management implementation across Indonesia.

Socialization is an effort to convey information and knowledge to the public to increase awareness of the importance of participation and involvement. Socialization refers to the process by which individuals learn and internalize the norms, values, culture, and behaviors accepted by the society in which they live. It involves interaction with others, such as family, peers, schools, and media, which shape an individual's understanding of how to behave and interact in society. In the context of social psychology, socialization is the process of forming individual social identities and is an essential stage in human development. This process begins in childhood and continues throughout life, although it may vary in intensity at each stage of life. Socialization can shape individual behaviors, beliefs, preferences, and thought patterns. It can also influence how individuals understand themselves and how they interact with others in various social contexts. In society, socialization plays a crucial role in maintaining social stability and cohesion by helping individuals understand accepted norms and participate in expected patterns of behavior. Socialization has many important benefits in individuals' lives and society. Some key benefits of the socialization process include the development of social identity, understanding of norms and values, development of social skills, strengthening of social relationships, social stability, and the formation of cultural life.



Figure 3. Establishment of one of the Disaster-Resilient Villages in Aceh

The disaster mitigation approach is carried out in two ways: (1) the structural approach involves disaster mitigation efforts through the development of physical infrastructure and the use of technology. In other words, engineering resilience against disasters. An example is the presence of tools to detect volcanic activity. All coordination and policy-making processes are carried out in a guided manner, as seen with residents in Fiji and Japan when faced with a tsunami disaster, providing social learning for communities in decision-making during disasters (Takasaki, 2016); and (2) the non-structural approach involves disaster mitigation efforts through socialization approaches and others.

This study aims to evaluate the effectiveness of utilizing the "Gancana" website platform in disseminating information and education regarding disaster mitigation to the people of Aceh, as well as to identify potential obstacles in empowering the community through this platform. The research method employed is descriptive qualitative, allowing for a comprehensive overview of the utilization of the "Gancana" website as a medium for socializing disaster mitigation in Aceh.

Data for this study were collected through literature reviews and direct observations of the characteristics of the "Gancana" website and its usage patterns by the people of Aceh. The results of the study indicate that the use of information technology, particularly through the "Gancana" website, holds potential for effectively disseminating information and education on disaster mitigation to the community. However, the study also identifies several obstacles that may hinder the effectiveness of utilizing this platform. One of the main findings is that the level of accessibility and understanding of the "Gancana" website among the community in Aceh still needs improvement. Despite efforts to enhance the accessibility of this platform, such as providing content in various languages and formats, further steps are needed to ensure that the information conveyed can be accessed by all segments of the community. Additionally, it was found that there are challenges in strengthening active community engagement in disaster mitigation efforts through the "Gancana" platform. Although various features and content are provided, further efforts are needed to increase community participation in utilizing the information conveyed by this platform.

In the context of disaster mitigation, community preparedness plays a crucial role. Therefore, efforts to optimize the use of the "Gancana" website as a medium for socializing disaster mitigation should be

supported by concrete measures to enhance accessibility, understanding, and active community engagement in facing potential disasters. Thus, this study provides a significant contribution to understanding the effectiveness and challenges in utilizing the "Gancana" website platform as a medium for socializing disaster mitigation in Aceh. The findings of this study are expected to serve as a basis for further development of the platform and for designing more effective strategies to enhance the preparedness of the people of Aceh in facing natural disasters.

4. Conclusion

In conclusion, the study highlights the potential of the "Gancana" website platform in effectively disseminating information and education regarding disaster mitigation to the people of Aceh. However, several obstacles were identified that may hinder its effectiveness.

Firstly, there is a need to improve the accessibility and understanding of the platform among the community in Aceh. Despite efforts to enhance accessibility through providing content in various languages and formats, further steps are necessary to ensure that the information conveyed can be accessed by all segments of the community.

Secondly, there are challenges in strengthening active community engagement in disaster mitigation efforts through the "Gancana" platform. Although various features and content are provided, additional efforts are needed to increase community participation in utilizing the information conveyed by this platform.

Overall, community preparedness plays a crucial role in disaster mitigation. Therefore, efforts to optimize the use of the "Gancana" website should be supported by concrete measures to enhance accessibility, understanding, and active community engagement in facing potential disasters. These findings can serve as a basis for further development of the platform and for designing more effective strategies to enhance the preparedness of the people of Aceh in facing natural disasters.

5. References

- Adinugraha, H., & Supriyatno, N. (2020). Evaluasi Pelaksanaan Mitigasi Bencana di Provinsi Aceh: Studi Kasus Implementasi Web GANCANA. *Jurnal Pemulihan Bencana*, 4(1), 45-58.
- Astuti, I., & Wulandari, L. D. (2020). Evaluasi Sosialisasi Mitigasi Bencana Melalui Media Sosial: Studi Kasus di Kota Semarang, Jawa Tengah. *Jurnal Bencana Geografi*, 6(2), 123-136.
- Badharudin, A. Y. (2018). *TEKNOLOGI INFORMASI DAN KOMUNIKASI DALAM MANAJEMEN BENCANA: STUDI KASUS TANAH LONGSOR DI KABUPATEN BANJARNEGARA* (Master's thesis, Universitas Islam Indonesia).
- Bakti, L. D., Imran, B., Wahyudi, E., Arwidiyarti, D., Suryadi, E., & Multazam, M. (2021). Data extraction of the gray level Co-occurrence matrix (GLCM) Feature on the fingerprints of parents and children in Lombok Island, Indonesia. *Data in Brief*, 36.
- Efendi, M. M., Rosidin, R., & Wahyudi, E. (2019). Metode Algoritma SIFT dan Histogram Color RGB Untuk Analisis Manipulasi Copy-Move pada Citra Digital. *EXPLORE*, 9(1), 31-35.
- Fauzi, F., & Marhamah, M. (2020). Pola komunikasi bencana dan media dalam meningkatkan kesiapsiagaan masyarakat di Kabupaten Aceh Utara. *Jurnal Pekommas*, 5(2), 133-142.
- Fitriani, S., et al. (2020). Manajemen Bencana Tsunami di Aceh. *Jurnal Bencana Aceh*, 8(1), 23-36.
- Hartono, B., & Suryadi, I. (2020). Partisipasi Masyarakat dalam Rencana Evakuasi Tsunami: Studi Kasus di Pesisir Kota Padang, Sumatera Barat. *Jurnal Geografi Lingkungan Tropik*, 5(2), 97-108.
- Imran, B., Wahyudi, E., Subki, A., Salman, S., & Yani, A. (2022). Classification of stroke patients using

- data mining with adaboost, decision tree and random forest models. *ILKOM Jurnal Ilmiah*, 14(3), 218-228.
- Lalu Ahmad Murdhani, Erfan Wahyudi, Mujahidin. (2024). Earthquake Risk Analysis for Disaster Management and Mitigation in Central Lombok. *International Journal of Scientific Research and Management (IJSRM)*, 12. <https://doi.org/10.18535/ijsrm/v12i02.em04>
- Nugroho, A., & Kurniawan, A. F. (2019). Manfaat Peta Interaktif dalam Kesiapsiagaan Bencana: Studi Kasus di Kota Bandung, Jawa Barat. *Jurnal Geografi*, 25(2), 109-122.
- Nurchaya, S. B., Sujana, N., & Azizah, N. (2022). DETAIL ENGINEERING DESIGN INFRASTRUKTUR TEKNOLOGI INFORMASI PERINGATAN DINI BANJIR DINAS PENGAIRAN PROVINSI ACEH. *Jurnal Teknologi Komputer dan Informatika*, 1(1), 1-14.
- Pramono, A. W., & Widodo, A. (2018). Pemanfaatan Web GANCANA sebagai Media Sosialisasi Mitigasi Bencana: Studi Kasus di Provinsi Jawa Timur. *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, 2(5), 2000-2010.
- Rachman, D., & Setyono, D. (2018). Dampak Banjir Terhadap Kesiapsiagaan Masyarakat: Studi Kasus di Kota Semarang, Jawa Tengah. *Jurnal Pemukiman*, 15(2), 97-108.
- Rahayu, A., et al. (2021). Pengelolaan Banjir di Wilayah Aceh. *Jurnal Penelitian Lingkungan dan Bencana*, 9(3), 215-230.
- Rahayu, S., & Hidayat, R. (2017). Pengaruh Sosialisasi Pemberdayaan Masyarakat terhadap Kesiapsiagaan Bencana: Studi Kasus di Desa Karanganyar, Lombok. *Jurnal Perencanaan Wilayah dan Kota*, 28(3), 219-232.
- Riska, B. N. R., Imran, B., Wahyudi, E., & Basri, H. (2017). Implementasi Website Portal Sekolah Sebagai Media Promosi dan Penyampaian Informasi (Studi Kasus: SMAN 1 Praya Timur). *Explore*, 7(2), 36-41.
- Setiawan, B., et al. (2020). Peringatan Dini Bencana: Penggunaan Teknologi Informasi di Aceh. *Jurnal Teknologi Informasi dan Komunikasi*, 12(1), 45-60.
- Wahyudi, E. (2024). Implementasi E-Journal berbasis Open Journal System (OJS) untuk Meningkatkan Jumlah Publikasi Penelitian Dosen IPDN Kampus NTB. *Explore*, 14(1), 35-41.
- Wahyudi, E. (2023). Optimalisasi Hasil Pengabdian Dosen Melalui Pembuatan Jurnal Abdimas Berbasis Open Journal System (OJS) di IPDN Kampus NTB. *Explore*, 13(2), 85-91.
- Wahyudi, E., Efendi, M. M., Subli, M., Subki, A., & Alfian, M. R. (2020). Penerapan digital signature scheme dengan metode schnorr authentication. *Explore*, 10(1), 23-30.
- Wahyudi, E (2018). Analisis Keamanan WPA2-PSK Dan Radius Server Pada Jaringan Nirkabel Menggunakan Metode Wireless Penetration Testing. *J. Ilm. Rinjani_Universitas Gunung Rinjani*, 6(1), 199-206.