



Coastal Women's Community Resilience Model as a Disaster Mitigation Effort; inspired by the Motherschool's Program from Women without Borders

¹Bunga Aprillia

¹*Jenderal Achmad Yani University, Jl. Jendral Sudirman, 40533, Cimahi, Indonesia*

*) Correspondence regarding this article should be addressed to:

E-mail: bunga.aprillia@lecture.unjani.ac.id

Abstract: Indonesia's coastal areas are highly vulnerable to tsunamis, which disproportionately impact women. Coastal women play multiple roles in the domestic, economic, and social spheres of the community, thus holding a strategic position in strengthening family resilience. This study aims to formulate a model for strengthening the capacity of coastal women based on a women's community approach, derived from the Motherschool's learning model developed by Women without Borders, an Austrian NGO. This model can support tsunami disaster risk reduction in coastal areas through women's movements. The study employed a qualitative approach, with data collection techniques including literature review and interviews. The results indicate that strengthening the capacity of coastal women through group learning can improve risk understanding, family preparedness, and community social networks. The resulting model is structured at three learning levels: micro, meso, and macro. This research contributes to the development of gender-based disaster studies and provides practical implications for the formulation of community-based disaster risk reduction policies.

Keywords: community resilience, disaster mitigation, motherschool's program

Abstrak: Kawasan pesisir Indonesia sangat rentan terhadap tsunami, yang memberikan dampak secara tidak proporsional terhadap perempuan. Perempuan pesisir memainkan berbagai peran dalam ranah domestik, ekonomi, dan sosial masyarakat, sehingga memiliki posisi strategis dalam memperkuat ketahanan keluarga. Penelitian ini bertujuan untuk merumuskan model penguatan kapasitas perempuan pesisir berdasarkan pendekatan komunitas perempuan, yang diadaptasi dari model pembelajaran Motherschool hasil pengembangan Women without Borders, sebuah LSM asal Austria. Model ini dapat mendukung pengurangan risiko bencana tsunami di wilayah pesisir melalui gerakan perempuan. Penelitian ini menggunakan pendekatan kualitatif, dengan teknik pengumpulan data meliputi tinjauan pustaka dan wawancara. Hasil penelitian menunjukkan bahwa penguatan kapasitas perempuan pesisir melalui pembelajaran kelompok dapat meningkatkan pemahaman risiko, kesiapsiagaan keluarga, dan jejaring sosial masyarakat. Model yang dihasilkan disusun dalam tiga tingkatan pembelajaran: mikro, meso, dan makro. Penelitian ini berkontribusi pada pengembangan studi bencana berbasis gender dan memberikan implikasi praktis bagi penyusunan kebijakan pengurangan risiko bencana berbasis komunitas.

Kata kunci: Ketahanan, mitigasi bencana, program MotherSchools

INTRODUCTION

Indonesia is one of the countries with the highest levels of natural disaster vulnerability in the world, including earthquakes and tsunamis. Based on the Indonesian Disaster Risk Index or IRBI in 2025, Majene Regency and North Maluku Regency are still among the top 10 disaster-prone areas in Indonesia. Historical data shows that the impact of disasters is not gender-neutral, with women and children often being the most vulnerable groups (Gaillard et al., 2017). This vulnerability is related to social, economic, and cultural factors that limit women's access to information, resources, and decision-making in emergency situations. Coastal areas in Indonesia are experiencing accelerated economic and tourism

development, which has resulted in increased exposure to tsunami disaster risk (Rumambi, 2023). Amid these dynamics, the capacity of communities, particularly coastal women, is a key factor in building family and community resilience (Women without Borders, 2022). Women play a key role not only in household management but also as agents of knowledge transmission and preparedness values to family members (Yadav et al., 2021) (Gaillard et al., 2017). Various disaster mitigation technology innovations have been developed, one of which is the BNPB's InaRISK application. However, its utilization at the coastal community level still faces obstacles such as digital literacy and limited access (Ramalho, 2020) (Aprillia et al., 2022). Therefore, non-technological approaches through direct education and community-based empowerment are relevant (Pratchett, 1999).

We developed a theory based on Grounded Theory proposed by Glaser and Staruss in 1967, which divides the classification of theories into three stages, namely determining grand theory, middle-range theory, and applied theory (Glaser & Strauss, 1967). The following figure 1.2 illustrates the concept of the theory being developed:

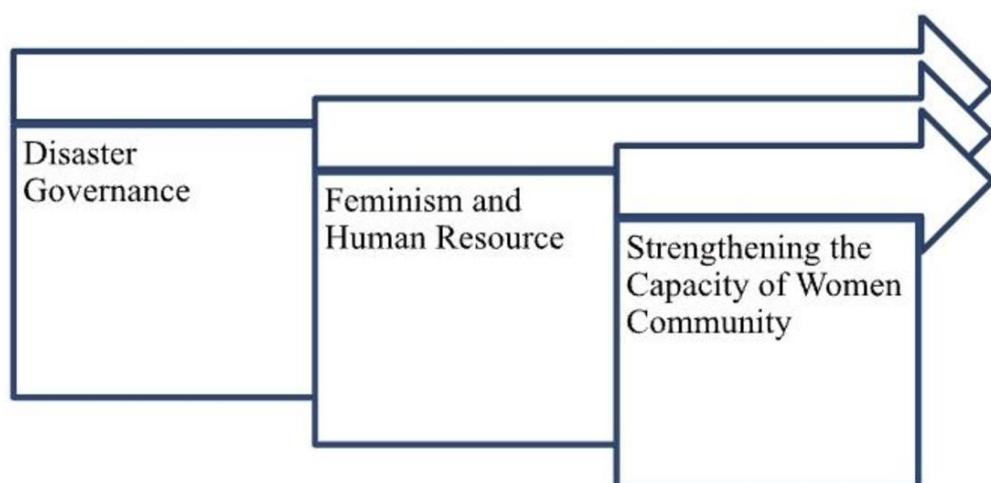
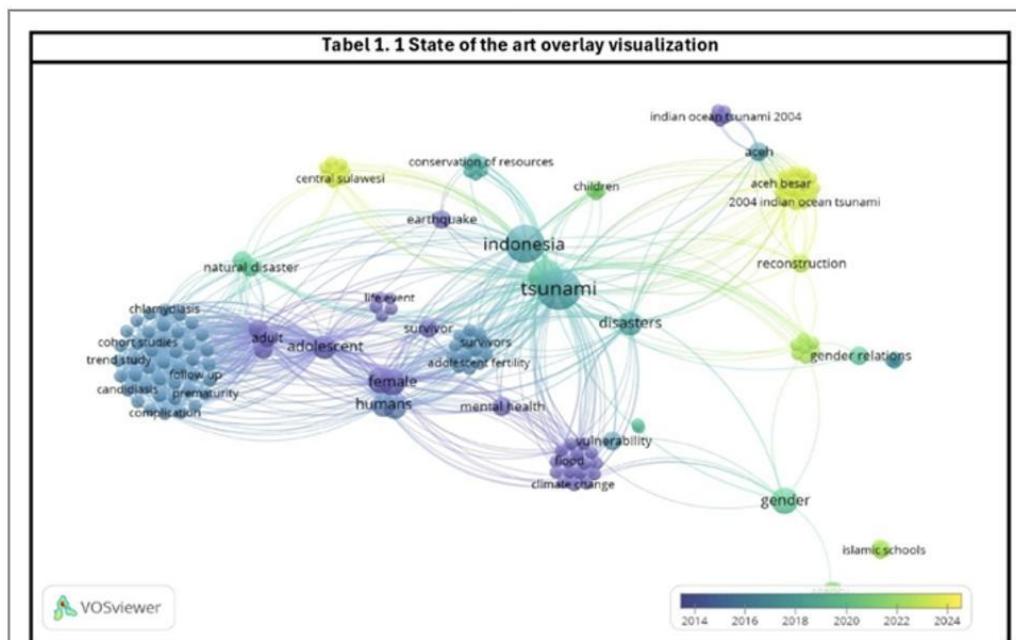


Figure 1. Theory Concept

Based on the theoretical concept above, a search for journal articles with the keyword "women and tsunami" on the Scopus search site obtained 233 articles on women and tsunamis in 1998-2024. Based on country, there are 14 articles originating from Indonesia, the articles display several study focuses and only 2 studies on the study of strengthening the capacity of coastal women in the field of education. The titles of the studies are "Analyzing the spectrum of female education leaders' agency in Islamic boarding schools in post-conflict Aceh, Indonesia" and "Silent struggles: women education leaders' agency for peacebuilding in Islamic schools in post-conflict Aceh". The following is a figure that presents the position of this study with other studies in Indonesia using bibliometric analysis in Table 1.1:



The analysis in the image above shows that 1) research on the topics of 'tsunami', 'Disaster', 'Indonesia' appears to have been extensively researched, this is evident from the size of the dominant circle on the 3 keywords. 2) research on the topics of 'Gender relations' and 'gender' has also been extensive. 3) however,

research on the relationship between the 'tsunami' disaster and 'gender relations', 'gender' is indicated to be positioned separately from the main topics of 'Disaster', 'Tsunami' and 'Indonesia'. This means that there are limited research on the topic of gender relations with the tsunami. The following are 2 (two) previous studies that are very close to this research in Table 1.2:

| No | Titles | Publications | Results |
|----|---|--|--|
| 1 | Silent struggles: women education leaders' agency for peacebuilding in Islamic schools in post-conflict Aceh (Lopes Cardozo et al., 2022) | Mieke T. A. Lopes Cardozo, Rizki Amalia Affiat, Faryaal Zaman, Maida Irawan, & Eka Srimulyani (2022). Journal of Peace Education, 19(2), 158–181. DOI: 10.1080/17400201.2022.2052826 | The role of grassroots education actors in the process of societal transformation and peacebuilding through a gender-specific lens, to explore contextual understandings of institutions through a cultural political economy approach, complemented by insights from critical and decolonial peace education. |

| | | | |
|---|---|---|--|
| 2 | Analysing the spectrum of female education leaders' agency in Islamic boarding schools in post-conflict Aceh, Indonesia | Mieke T. A. Lopes Cardozo & Eka Srimulyani (2021). <i>Gender and Education</i> , 33(7), 847–863. DOI: 10.1080/09540253.2018.1544361 | This study explores the grassroots roles and motivations of female educational leaders, and analyzes how various contextual factors (political, economic, socio-cultural, and religious) play a role in their sense of agency and engagement in the (re)production or challenges of society, inequalities, and tensions. |
|---|---|---|--|

The community strengthening model through group learning for coastal mothers/women is considered reliable (Brooks et al., n.d.). Through this model, existing capacities need to be mapped first to achieve the desired results. Creating a capacity strengthening model for coastal women is crucial for implementing the women's community learning model (Aspfors & Fransson, 2015) (Turnbull & Turvill, 2012). This model is planned to be a solution in building a disaster-resilient ecosystem and accelerating the mainstreaming of disaster mitigation in development. The Motherschool program developed by Women without Borders has shown effectiveness in increasing family and community resilience in various

countries. Based on these conditions, this study offers a novelty in the form of a community-based capacity strengthening model for coastal women adapted to the local context of coastal areas in Indonesia. This model is expected to be able to fill the gap in research related to the integration of gender perspectives in tsunami disaster risk reduction in Indonesia. The context of community-based capacity strengthening is known as the division of individual capacity (micro), organizational / community capacity (meso) and institutional / systemic capacity (macro). Drawing on UNDP's capacity development framework, capacity is understood as a multi-level construct encompassing individual capacity, organizational or community capacity, and institutional or systemic capacity (UNDP, 2009).

METHODS

This study employed a qualitative approach with a descriptive-analytical design. The research locations were in coastal areas in Indonesia that are considered disaster-prone, namely Bacan, North Maluku, and Majene, West Sulawesi. Informants were selected purposively, including coastal women, village officials, and regional disaster stakeholders. Data collection was conducted through two main techniques: literature review and interviews. Data analysis followed the Creswell J, which includes collecting data, reduction, display, conclusion (Creswell, 2014).

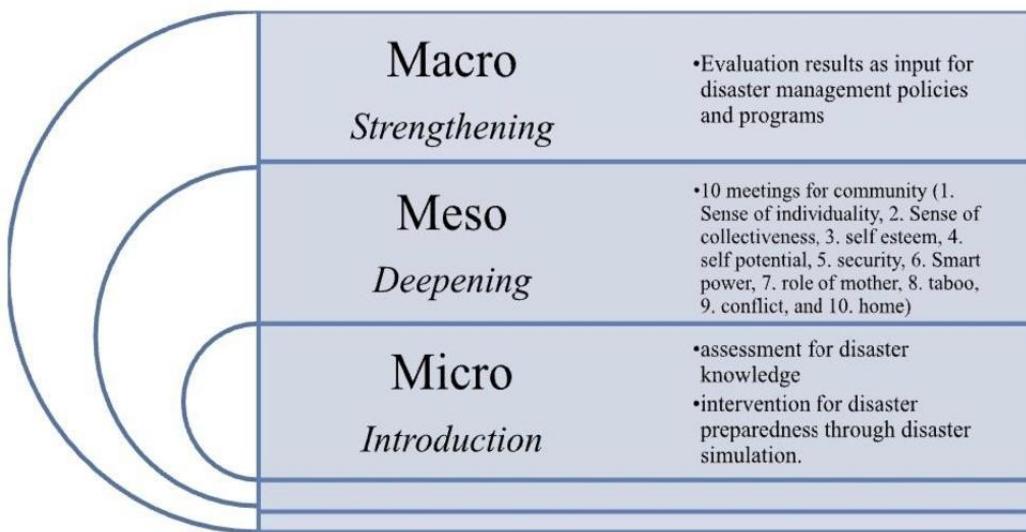
RESULTS AND DISCUSSION

Through a review of the relevant literature, practical experience as a MotherSchools teacher in Indonesia in 2023, and an examination of the UNDP capacity development framework, the researcher identifies a coherent and effective conceptual approach for building resilient women's communities. This integrated perspective highlights how strengthening individual capacities, fostering collective

learning spaces, and reinforcing community-level networks can create a solid foundation for women-led resilience in the face of various forms of crisis. The research results show that coastal women have varying levels of disaster risk awareness, influenced by disaster experience, education level, and access to information. The Motherschool approach, implemented in groups, can improve understanding of tsunami risk and family-based mitigation strategies. The resulting capacity-building model consists of three micro levels: introduction, meso; deepening, and macro; strengthening. The distinction between micro, meso, and macro levels originates from sociological and governance theories, which conceptualize social change as an interaction between individual actors, collective arrangements, and institutional systems.

1. At the micro level, interventions focus on increasing women's knowledge and preparedness within the family.
2. The meso level emphasizes strengthening social networks and solidarity within coastal women's communities through 10 activity meeting with the titles 1. Sense of individuality, 2. Sense of collectiveness, 3. Self- esteem, 4. Self-potential, 5. Security, 6. Smart power, 7. Role of mother, 8. Taboo, 9. Conflict, and 10. Home. Below explained one by one;
3. Sense of Individuality; this session discusses the importance of recognizing one's identity, personal values, and individual rights and responsibilities in social life, so that each community member can become a whole and confident person.
4. Sense of Collectiveness; this session emphasizes the meaning of togetherness, solidarity, and cooperation within the community as the foundation for building mutually supportive and sustainable social relationships.

5. Self-Esteem; this session aims to strengthen self-esteem by helping participants understand their strengths, accept their weaknesses in a healthy manner, and develop a positive attitude toward themselves.
6. Self-Potential; this session focuses on exploring one's potential, recognizing talents and interests, and encouraging the development of skills that can benefit oneself and the community.
7. Security; this session discusses a sense of security, both physical, psychological, and social, and how communities can play an active role in creating a safe and protective environment.
8. Smart Power; this session examines the intelligent use of power through a combination of knowledge, communication, empathy, and positive influence to achieve common goals without violence.
9. The Role of Mother; this meeting discussed the role of mothers in families and communities, not only as caregivers, but also as educators, decision-makers, and agents of social change.
10. Taboo; this session opened a dialogue on issues previously considered taboo, using an educational and empathetic approach, enabling the community to discuss them in a healthy and responsible manner.
11. Conflict; this meeting discussed conflict as part of social dynamics, while equipping participants with skills for managing and resolving conflict constructively.
12. Home; This closing session reflected on the meaning of home as a safe space, a place to grow and learn, and a center for the formation of human values and togetherness in everyday life.
13. The macro level focuses on integrating learning outcomes into regional disaster policies and programs.



Picture 2. Coastal Women's Community Resilience Model

These findings strengthen the argument that disaster risk reduction will be more effective if women are involved as key actors.

DISCUSSION

The findings of this model are unprecedented for women in coastal areas. Researchers hope it can serve as a guide for future researchers in exploring the potential of coastal women in disaster mitigation efforts. Group learning through community groups is a way for communities to become more resilient, as women can share their experiences at each meeting, which serves as a learning experience for other women. Women without borders through the motherschool program The Motherschools program strengthens mothers' agency and confidence by recognizing them as key actors in family and community resilience. Participants report improved parenting skills and communication, enabling more open, empathetic dialogue with their children. The program also increases mothers' awareness and capacity to identify early signs of risk, including vulnerability to violent extremism, and equips them with nonviolent, preventive responses. In

addition, MotherSchools helps break social taboos, creating safe spaces for discussion of sensitive family and social issues. This process contributes to stronger social networks among mothers, enhanced community trust, and gradual shifts in family power relations, including greater respect for women's voices in household decision-making. Overall, the findings show that MotherSchools effectively links gender, parenting, and peacebuilding by translating everyday maternal roles into meaningful contributions to social cohesion and prevention. The MotherSchools program does not explicitly promote disaster resilience as a technical or operational objective. Its primary focus is on strengthening mothers' roles in parenting, peacebuilding, and the prevention of violence.

While MotherSchools often begins with strengthening individual reflection, confidence, and skills among mothers (the micro level), its core intervention takes place in a collective and relational space. The program focuses on women's groups, family relations, and community networks, which are central characteristics of the meso level. At this level, MotherSchools works to build the capacity of women's groups and community-based collectives, strengthen social interaction, trust, and solidarity, create safe collective learning spaces for dialogue and shared problem-solving, and translate individual capacities into collective social practices within the community. Through these processes, MotherSchools functions as a social organizing mechanism that bridges individual empowerment with broader community outcomes. For this reason, it is most accurately positioned as a meso-level intervention, linking micro-level capacity building among mothers to potential macro-level effects, such as shifts in social norms, community resilience, and inclusive governance.

Nevertheless, at a conceptual level, MotherSchools strongly aligns with the foundations of community resilience, including resilience in disaster contexts. The program strengthens individual and collective capacities among women, builds trust and social networks, and enhances communication, leadership, and decision-making skills. These capacities are widely recognized as critical enablers of community preparedness, response, and recovery during crises. Disasters are frightening for everyone, including women. When such crises occur, communities with strong internal cohesion and empowered members are better able to cope with fear, uncertainty, and disruption. In this sense, the capacities fostered through MotherSchools can function as a social and psychological lever, enabling women's groups to support their families and wider communities during emergencies. In short, while MotherSchools does not teach disaster preparedness in a technical sense, it cultivates women-centered social resilience that can be mobilized to strengthen community responses to disasters and other forms of collective shock.

In this paper, the authors argue that when women's communities are first equipped with strong individual capacities and then supported to strengthen their surrounding environment, these communities become more resilient and cohesive. Disasters are frightening for everyone, including women. For this reason, when disasters occur, the capacity of women's communities can serve as a critical lever to strengthen and support the broader environment in which they live. Through a three-stage model of community resilience, women can understand their place within the family and their role in society when a disaster strikes. The first stage provides a general understanding; the second stage provides in-depth exploration and awareness as women, mothers, and significant members of society. The final stage is an evaluation stage, which serves as an output for policymaking at the regional level.

CONCLUSIONS

This study concludes that strengthening the capacity of coastal women through a community approach contributes significantly to increasing family resilience in facing tsunami risks. The Community Resilience model consists of three micro levels: introduction, meso; deepening, and macro; strengthening. The resulting model is adaptive, gender-based, and contextual to the characteristics of coastal areas. Implications of this research include strengthening community-based disaster risk reduction policies and mainstreaming gender into disaster management practices at the regional level. Through community-based approaches, cumulative results will be achieved to create a resilient society. The culture of mutual cooperation that grows within a community in solving a problem becomes a strong cultural factor. If technology becomes unreliable due to a disaster, local wisdom through strong community resilience will help in emergency situations.

Bibliography

Aprillia, B., Komariyah, I., & Saleha, E. (2022). Protection of Women in Disaster Emergency Situations; Seven Stages of Participatory Capacity and Vulnerability Analysis. *Indonesian Journal of Social Science Research*, 3(1), 39–43. <https://doi.org/10.11594/ijssr.03.01.05>

Aspfors, J., & Fransson, G. (2015). Research on mentor education for mentors of newly qualified teachers: A qualitative meta-synthesis. *Teaching and Teacher Education*, 48, 75–86. <https://doi.org/10.1016/j.tate.2015.02.004>

Brooks, N., Neil Adger, W., Authors, C., Barnett, J., Woodward, A., Lim, B., Archer, R. E., Atikullah, M., Bhawal, S., Bosch, H., Eakin, H., Furtado, J., Hellmuth, M., Kelkar, U., Lugenja, M., Munasinghe, M., Nyong, A., Rahman, A., Safi, S., ... Wilbanks, T. J. (n.d.). *Assessing and Enhancing Adaptive Capacity*.

Creswell, J. W. (2014). *Research-Design_Qualitative-Quantitative-and-Mixed-Methods-Approaches* (4th ed.). SAGE Publisher.

Gaillard, J. C., Sanz, K., Balgos, B. C., Dalisay, S. N. M., Gorman-Murray, A., Smith, F., & Toelupe, V. (2017). Beyond men and women: a critical perspective on gender and disaster. *Disasters*, 41(3), 429–447. <https://doi.org/10.1111/dis.12209>

Glaser, B. B., & Strauss, A. L. (1967). *The Discovery of Grounded Theory*. Aldine Transaction. http://www.sxf.uevora.pt/wp-content/uploads/2013/03/Glaser_1967.pdf

Lopes Cardozo, M. T. A., Affiat, R. A., Zaman, F., Irawani, M., & Srimulyani, E. (2022). Silent struggles: women education leaders' agency for peacebuilding in Islamic schools in post-conflict Aceh. *Journal of Peace Education*, 19(2), 158–181. <https://doi.org/10.1080/17400201.2022.2052826>

Pratchett, L. (1999). New technologies and the modernization of local government: An analysis of biases and constraints. In *Public Administration* (Vol. 77, Issue 4, pp. 731–751). <https://doi.org/10.1111/1467-9299.00177>

Ramalho, J. (2020). Engendering disaster risk management and resilience-building: The significance of the everyday in evaluations of the exceptional. *International Journal of Disaster Risk Reduction*, 50(August), 101830. <https://doi.org/10.1016/j.ijdrr.2020.101830>

Rumambi, F. J. (2023). *Bencana Tsunami dan Dampak Terhadap Lingkungan Indonesia* (Zulfa, Ed.; 1st ed.). CV. Haura Utama.

Turnbull, M., & Turvill, E. (2012). *Participatory Capacity and Vulnerability Analysis* (1st ed.). Oxfam GB.

UNDP (2009). *Capacity Development: A UNDP Primer*. New York: United Nations Development Programme.

Women without Borders. (2022). *A RETURN TO TOLERANT AND RESILIENT COMMUNITIES?* <https://wwb.org/wp-content/uploads/2022/09/WwB-A-Return-to-Tolerant-and-Resilient-Communities.pdf>

Yadav, P., Saville, N., Arjyal, A., Baral, S., Kostkova, P., & Fordham, M. (2021). A feminist vision for transformative change to disaster risk reduction policies and practices. *International Journal of Disaster Risk Reduction*, 54(December 2020), 102026. <https://doi.org/10.1016/j.ijdrr.2020.102026>