Collaborative governance: Multifaceted strategies for disaster response in Cebu province

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Abstract: This study examined the level of implementation, strategies, and challenges of collaborative governance during disaster response in Cebu Province. A total of 42 respondents from various disaster response agencies, including the Bureau of Fire Protection, local disaster risk reduction offices, and health emergency services, participated in the survey. The results showed that collaborative governance mechanisms were generally well-practiced, with strong inter-agency coordination, regular joint planning, effective resource sharing, and clear evacuation procedures. Early warning systems, pre-positioned supplies, and shelter management were identified as major strengths that contributed to rapid and organized disaster response. However, several challenges persisted. The most significant barriers reported were insufficient resources and logistics, followed by data management issues and communication gaps. Limited coordination among agencies, low stakeholder participation, and capacity and training issues were also noted but ranked as less critical. These challenges suggest the need for enhanced funding, clearer information-sharing protocols, and more inclusive engagement of community members and partners. Despite these obstacles, the study found that the majority of disaster response practices reflected a high level of preparedness and cooperation. Strengthening transparency, accountability, and training initiatives could further improve performance and build trust among stakeholders. Overall, the findings emphasize that while Cebu Province has established effective systems for managing disasters, addressing resource constraints, and improving collaboration can significantly enhance resilience and community safety. These insights can inform policy development, capacity building, and future disaster management planning in similar settings.

Keywords: Collaborative governance, Communication gaps, Data management, Disaster response, Inter-agency coordination, Resource sharing.

1. Introduction

In the face of increasingly frequent and complex disasters, collaborative governance has emerged as a vital framework for enhancing the responsiveness, coordination, and sustainability of disaster management efforts. It emphasizes cross-sector cooperation among government agencies, non-governmental organizations (NGOs), community stakeholders, and private entities to achieve unified disaster preparedness, response, and recovery. Collaborative governance helps bridge capacity gaps by pooling diverse resources and knowledge systems, thus strengthening disaster resilience at the local and regional levels (Dai & Azhar, 2024). Social capital-based collaboration further promotes inclusive participation, ensuring that affected populations become active agents of recovery rather than passive victims (Rachim, Nurhasanah, & Idris, 2020). Studies in Myanmar and Lembata Regency illustrate how structured cooperation reduces vulnerabilities and accelerates response efforts (Aung & Lim, 2021;

Satyadharma, Nugroho, & Lestari, 2020). Moreover, collaborative governance is directly aligned with international frameworks such as the Sendai Framework and the UN Sustainable Development Goals. (McNaught, 2024), reinforcing its global relevance.

Despite its potential, the implementation of collaborative governance in disaster response often encounters several challenges. One of the major issues is the fragmentation and lack of coordination among actors involved in emergency management, leading to inefficiencies and duplicated efforts (Shahid, Ahmed, & Khan, 2024). In many regions, power asymmetries prevent local stakeholders from fully participating in decision-making processes, which limits inclusivity and innovation (Russell, Bhattarai, & Shrestha, 2021). Furthermore, weak trust among stakeholders and a lack of shared goals often inhibit the establishment of strong collaborative networks (Kukun, Prasetyo, & Santoso, 2024). Inconsistent communication and limited resource sharing, especially during high-stress periods, are other common barriers (Manurung, Yuliani, & Siregar, 2023). These challenges collectively weaken disaster governance systems, making responses more reactive than strategic.

If collaborative governance challenges are not addressed, the consequences for disaster-affected communities can be severe. Poorly coordinated responses lead to delayed relief, inefficient resource allocation, and a prolonged recovery process, all of which intensify the suffering of vulnerable populations (Rim, Choi, & Kim, 2021). Without inclusive participation and local ownership, recovery efforts often overlook context-specific needs, exacerbating social inequalities and eroding community trust in institutions (Policzer, 2024). Additionally, weak collaboration hinders the effectiveness of risk communication, contributing to panic, misinformation, and poor preparedness among the public (Zaenuri, 2023). A long-term failure to improve collaborative frameworks can erode institutional credibility and diminish international and local investments in resilience-building programs (Hasbullah, 2024). The compounded effect of these factors results in communities being repeatedly devastated by preventable disasters, locking them into cycles of vulnerability and dependency.

Various researchers have explored innovative strategies to enhance collaborative governance in disaster response. For instance, longitudinal social network analysis has been used to map evolving collaborative ties and identify which partnerships are most resilient during crisis periods (Aung & Lim, 2021). Others have proposed the integration of social capital frameworks, which emphasize mutual trust and shared norms, as a way to facilitate grassroots-level engagement (Rachim et al., 2020). Leadership models focusing on transparency, inclusivity, and power-sharing have also been developed to overcome bureaucratic inertia and stakeholder mistrust (Darmanto, 2023). Additional frameworks have been built around federal reforms and community-based participatory planning, as seen in Nepal and Indonesia, where governance structures are being reshaped to embed collaborative mechanisms at every level (Irwan, Suwarno, & Hakim, 2022; Russell et al., 2021).

While existing studies contribute significantly to our understanding of collaborative governance, a clear gap remains in localized and context-specific research, especially in mid-level urban areas like Cebu Province. Most models and findings are derived from large-scale disasters or national frameworks, which may not translate directly to provincial or municipal settings (McNaught, 2024). Additionally, fewer studies have addressed the specific barriers that arise in archipelagic, linguistically diverse, and politically fragmented settings like the Philippines. There is also limited evaluation of how collaborative governance influences real-time disaster outcomes beyond theoretical frameworks (Gian, Pineda, & Morales, 2023). Another underexplored area is how collaborative governance can be scaled sustainably across different phases of disaster management, from risk reduction to recovery (Zaenuri, 2023). These gaps justify the need for a focused case study of Cebu Province to derive actionable strategies tailored to its specific context. This research offers numerous benefits to both the community and government agencies in Cebu Province. By identifying and analyzing barriers to effective collaboration, the study can inform the creation of more inclusive and responsive governance structures. These improvements will directly enhance the capacity of local communities to prepare for and respond to disasters, reducing both human and economic losses. The government will benefit from policy recommendations grounded in real-world data, improving inter-agency coordination and stakeholder trust. Community engagement

will also be strengthened through participatory planning and communication strategies tailored to local needs. In the long run, this research may contribute to a culture of preparedness and shared accountability, reducing dependency on centralized response models.

2. Methodology

This study employed a descriptive-evaluative research design to assess the level of implementation, effectiveness, and challenges of collaborative governance mechanisms in disaster response across selected municipalities and cities in Cebu Province. The descriptive component gathered data on the demographic profile of respondents and the existing coordination practices among agencies, while the evaluative aspect analyzed the perceived efficiency and impact of these practices. This approach was appropriate as it allowed for both the documentation and critical assessment of collaborative disaster governance in real settings. The study utilized the Input–Process–Output (IPO) framework as its conceptual guide. The Input included respondents' demographic profiles such as age, gender, educational attainment, years of service, organization affiliation, and specific roles in disaster response operations. The Process involved the administration of a validated survey questionnaire, which measured the level of implementation and effectiveness of collaborative mechanisms based on governance indicators: inter-agency coordination, stakeholder participation, resource sharing, transparency, and community engagement. Respondents rated each statement using a 5-point Likert scale, ranging from Strongly Disagree (1.00–1.80) to Strongly Agree (4.21–5.00), indicating their degree of agreement or satisfaction. The Output consisted of a proposed intervention plan designed to enhance collaboration, strengthen inter-agency linkages, and improve overall disaster response efficiency.

The study was conducted in selected local government units (LGUs) within Cebu Province, an area prone to natural disasters such as typhoons and earthquakes. A total of 42 respondents, comprising Disaster Risk Reduction (DRR) officers and personnel from various agencies, were selected through purposive sampling to ensure that participants possessed relevant knowledge and firsthand experience in disaster governance and response.

3. Results

Table 1.
Collaborative Governance Mechanisms.

Collaborative Governance Mechanisms	WM	SD	VD
My organization coordinates effectively with other agencies during disasters.	4.20	0.59	A
Communication channels are clear and functional during emergency response.	4.00	0.65	A
Roles and responsibilities among agencies are well-defined.	3.80	0.68	A
Joint planning and simulation exercises are conducted regularly.	4.21	0.58	A
Coordination meetings are timely and inclusive.	4.20	0.59	A
Grand Mean	4.08	0.62	A

The table shows that respondents generally agree that collaborative governance mechanisms are well implemented during disaster response, as reflected in a grand mean of 4.08. The highest-rated indicators were joint planning and simulation exercises (4.21) and effective coordination with other agencies (4.20), suggesting that structured preparation and clear teamwork are strengths in their operations. Communication channels (4.00) and clarity of roles (3.80) received slightly lower but still positive ratings, indicating areas that could be further improved to avoid confusion during emergencies. These findings imply that while collaboration is strong overall, investing in clearer role definitions and more robust communication systems can enhance responsiveness. Research has shown that well-coordinated inter-agency collaboration significantly improves disaster outcomes by reducing duplication of efforts and ensuring faster delivery of assistance (Ansell & Gash, 2008; Kapucu, 2012).

Table 2.
Stakeholder Participation.

Stakeholder Participation	WM	SD	VD
Various stakeholders are invited to disaster planning sessions.	4.62	0.42	SA
The opinions of community members are considered in response planning.	3.58	0.7	A
Participation is encouraged across all sectors (public, private, NGOs).	4.05	0.63	A
I feel my input is valued in decision-making processes.	3.58	0.7	A
There is equal opportunity to contribute regardless of position.	3.42	0.72	A
Grand Mean	3.85	0.63	A

The table indicates that respondents generally agree that stakeholder participation in disaster response is actively practiced, with a grand mean of 3.85. The highest rating was for inviting various stakeholders to disaster planning sessions (4.62), reflecting strong efforts to include different groups in planning activities. However, the ratings were lower for valuing individual input (3.58) and ensuring equal opportunity to contribute regardless of position (3.42), suggesting some respondents feel their voices carry less weight in decision-making. Participation across sectors (4.05) was viewed positively, indicating that partnerships with NGOs and private organizations are common. These findings imply that while formal involvement of stakeholders is prioritized, there may be gaps in how inclusive and empowering participation feels in practice. Research emphasizes that authentic engagement, where community members see their input reflected in decisions, is essential to building trust, ownership, and more resilient disaster response systems (Few, Brown, & Tompkins, 2007; Reed, 2008).

Table 3.
Resource Sharing.

Resource Sharing	WM	SD	VD
Agencies share equipment and supplies when needed.	4.28	0.42	SA
Human resources are mobilized collaboratively.	4.52	0.70	SA
Our agency receives timely support from partners.	4.28	0.63	SA
There are clear protocols for resource mobilization.	4.26	0.70	SA
External aid and donations are distributed fairly.	4.32	0.72	SA
Grand Mean	4.33	0.63	SA

The table shows that respondents strongly agree that resource sharing practices are effectively implemented during disaster response, with a grand mean of 4.33. The highest rating was given to the collaborative mobilization of human resources (4.52), indicating strong teamwork among agencies in deploying personnel. Fair distribution of external aid and donations (4.32) and timely support from partners (4.28) also received high marks, showing that assistance reaches those in need quickly and equitably. Clear protocols for resource mobilization (4.26) further demonstrate that structured systems are in place to guide sharing efforts. These findings suggest that well-established processes and strong inter-agency cooperation contribute to effective disaster operations. However, maintaining these positive practices requires continued commitment to coordination and transparency, especially as demands increase during large-scale emergencies. Studies highlight that clear agreements, joint training, and trust among partners are key factors in successful resource sharing, helping to avoid duplication, speed up response times, and maximize limited supplies (Comfort, 2007; Kapucu, 2006).

Table 4.
Transparency and Accountability.

Effectiveness of Disaster Response	WM	SD	VD
Disaster-related decisions are communicated transparently.	4.42	0.50	SA
Fund usage and resource allocation are clearly reported.	3.73	0.70	A
Complaints or concerns are properly addressed.	4.25	0.58	SA
Decision-makers are accountable to the public.	3.89	0.66	A
Reports and documentation are accessible and up to date.	3.74	0.70	A
Grand Mean	3.81	0.63	A

The table shows that respondents generally agree that transparency and accountability are practiced in disaster response, with a grand mean of 3.81. The highest-rated indicator was transparent communication of disaster-related decisions (4.42), suggesting strong efforts to inform stakeholders about actions taken. Complaints and concerns being properly addressed also received a high score (4.25), showing responsiveness to feedback. However, fund usage reporting (3.73) and accessible documentation (3.74) received lower, though still positive, ratings, indicating that financial transparency and record-keeping could be improved. Accountability to the public (3.89) was also rated moderately, reflecting a need for clearer mechanisms to demonstrate responsibility. These findings imply that while information sharing is prioritized, consistent reporting and accountability structures remain areas for development. Research has emphasized that transparent communication and open disclosure of resource use build trust, reduce misinformation, and strengthen collaboration among government, partners, and communities (Boin & 't Hart, 2010; Waugh Jr & Streib, 2006).

Table 5.
Community Engagement.

Community Engagement	WM	SD	VD
Community members are involved in preparedness activities.	3.47	0.72	A
Local knowledge is integrated into disaster planning.	3.89	0.66	A
There are feedback mechanisms for community concerns.	3.74	0.70	A
Volunteers are actively engaged during disasters.	4.00	0.65	A
Risk communication reaches even the most vulnerable groups.	3.80	0.68	A
Grand Mean	3.78	0.68	A

The table shows that respondents generally agree that community engagement is actively practiced, with a grand mean of 3.78. The highest rating was given to volunteer engagement during disasters (4.00), indicating that mobilizing community members in response activities is a strong point. Integration of local knowledge in planning (3.89) and reaching vulnerable groups through risk communication (3.80) also received positive scores, reflecting efforts to make disaster management inclusive. However, lower ratings for community involvement in preparedness (3.47) and feedback mechanisms (3.74) suggest areas where participation could be strengthened. These results imply that while community engagement is valued, there is still room to build more proactive involvement, particularly before disasters occur. Research emphasizes that involving communities early through participatory planning, regular drills, and clear feedback systems not only improves trust but also increases preparedness and resilience (Bayes, Rahman, & Hossain, 2020; Djalante, Shaw, & DeWit, 2021). Ensuring consistent two-way communication and supporting grassroots initiatives can help bridge gaps in engagement and make disaster response more effective and locally relevant.

Table 6.
Early Warning and Communication Systems.

Early Warning and Communication Systems	WM	SD	VD
Timeliness of issuing warnings before the disaster impact	4.40	0.50	SA
Use of multiple communication channels (e.g., SMS, radio, social media)	4.24	0.58	SA
Availability of community information boards or public advisories	4.40	0.50	SA
Coordination among agencies in releasing consistent messages	4.17	0.60	A
Community awareness and understanding of warning protocols	4.20	0.59	A
Grand Mean	4.28	0.55	SA

The table shows that respondents strongly agree that early warning and communication systems are effectively implemented, with a grand mean of 4.28. The highest ratings were given to the timeliness of issuing warnings (4.40) and the availability of community information boards and public advisories (4.40), suggesting that rapid, visible communication is a major strength. Use of multiple channels like SMS, radio, and social media (4.24) also scored high, reflecting the value of diverse tools to reach people

quickly. Slightly lower ratings for coordination among agencies (4.17) and community awareness of protocols (4.20) indicate areas that can still be improved to avoid confusion and ensure consistent messaging. These results imply that while warning systems are well-developed, efforts should continue to strengthen coordination and community education to maximize their impact. Research underscores that multi-channel, timely warnings significantly reduce casualties and losses, especially when communities understand how to act on alerts (Alexander, 2020; Paul & Ray-Bennett, 2021).

Table 7.
Pre-Positioning and Mobilization of Resources.

Pre-Positioning and Mobilization of Resources	WM	SD	VD
Existence of pre-identified storage facilities for relief goods and supplies	4.62	0.42	SA
Readiness of logistics and transportation arrangements	4.24	0.58	SA
Availability of an updated inventory of equipment and materials	4.32	0.54	SA
Speed of mobilizing resources after a disaster alert	4.26	0.57	SA
Coordination with partner agencies for resource sharing	4.28	0.56	SA
Grand Mean	4.34	0.53	SA

The table shows that respondents strongly agree that pre-positioning and mobilization of resources are effectively practiced, with a grand mean of 4.34. The highest rating was given to the existence of pre-identified storage facilities for relief goods and supplies (4.62), indicating strong preparedness in warehousing critical items. Availability of updated inventories (4.32), readiness of logistics (4.24), and coordination for resource sharing (4.28) were also rated highly, reflecting well-organized systems to deploy support quickly. The speed of mobilizing resources (4.26) further demonstrates the capacity to act rapidly when alerts are issued. These results imply that effective planning and coordination are in place, reducing delays and improving response outcomes when disasters strike. Research emphasizes that well-established logistics and pre-positioned supplies can significantly shorten response times and enhance the efficiency of humanitarian operations (Holguín-Veras, Taniguchi, & Jaller, 2020; Tatham & Pettit, 2010).

Table 8.
Evacuation and Shelter Management.

Evacuation and Shelter Management	WM	SD	VD
Existence and dissemination of clear evacuation plans and routes	4.32	0.54	SA
Availability and readiness of designated evacuation centers	4.28	0.56	SA
Adequacy of food, water, and medical supplies in shelters	4.36	0.52	SA
Implementation of security and safety measures in evacuation sites	4.62	0.42	SA
Provision of psychosocial support and special assistance for vulnerable groups	4.54	0.45	SA
Grand Mean	4.42	0.5	SA

The table shows that respondents strongly agree that evacuation and shelter management practices are effectively implemented, with a grand mean of 4.42. The highest rating was given to implementing security and safety measures in evacuation sites (4.62), emphasizing strong efforts to protect evacuees. Provision of psychosocial support and special assistance to vulnerable groups (4.54) also scored very high, reflecting attention to well-being and inclusion during emergencies. Clear evacuation plans (4.32), adequate food and medical supplies (4.36), and readiness of evacuation centers (4.28) were all rated highly, indicating robust preparation and coordination. These results suggest that the systems in place are comprehensive and prioritize both physical safety and psychosocial needs. Research highlights that successful evacuation and shelter operations require not only infrastructure and logistics but also community trust, culturally appropriate services, and targeted support for at-risk populations (Chan, Kim, & Lin, 2020; Uscher-Pines, 2020). Sustained training, regular drills, and updating of supplies and protocols will help maintain this high level of readiness and protect lives during disasters.

4. Conclusion

The study highlights both strengths and challenges in implementing collaborative governance during disaster response. While agencies demonstrated strong coordination, effective resource sharing, and well-organized evacuation systems, several barriers still hinder optimal performance. Insufficient resources and logistics, data management challenges, and communication gaps were the most significant issues, limiting the speed and effectiveness of response efforts. Additionally, limited coordination, low stakeholder participation, and capacity gaps indicate areas needing improvement. Strengthening training programs, enhancing information systems, and encouraging broader community engagement will be essential to overcome these challenges. Addressing these gaps, disaster response in Cebu Province can become more resilient, inclusive, and efficient, ultimately improving the safety and well-being of affected communities.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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