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Military Assistance to Civilians within the Framework of Collaborative Governance in Environmental Management

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Abstract. *Environmental pollution and ecosystem degradation present complex governance challenges that often exceed the capacity of civilian institutions alone, particularly in contexts characterized by weak enforcement and fragmented coordination. In response, governments increasingly involve the military in civilian environmental programs, raising important questions regarding collaborative governance, institutional roles, and legitimacy. This study examines collaborative governance in the context of military assistance to civilians in environmental pollution and damage control, focusing on governance processes rather than environmental outcomes alone. Employing a qualitative research design, data were collected through in-depth interviews with military personnel, civilian government officials, community representatives, and civil society actors, complemented by document analysis. The findings reveal that military involvement enhances coordination, accelerates implementation, and strengthens enforcement legitimacy through its operational capacity and symbolic authority. However, collaboration is characterized by asymmetrical power relations that require careful management to preserve civilian leadership and participatory governance principles. Community acceptance emerges as a critical factor, shaped by inclusive engagement, transparent communication, and adaptive coordination practices. This study contributes to the collaborative governance literature by empirically demonstrating how non-traditional actors can be integrated into civilian-led governance frameworks under real-world constraints. The findings offer policy-relevant insights for designing collaborative environmental governance arrangements that balance effectiveness, legitimacy, and long-term sustainability.*

Keywords: *Collaborative Governance, Military Assistance To Civilians, Environmental Pollution Control*

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INTRODUCTION

Environmental pollution and ecosystem degradation have become more complex governance issues that require concerted efforts of a large number of actors (Belaïd & Unger, 2024; Zafarullah & Huque, 2018; Yu & Ye, 2025; Vasseur et al., 2017). The high rate of industrialization, urbanization, and laxity in enforcing regulations have intensified the destruction of the environment in many localities, especially in watersheds and heavily populated locations (Masese et al., 2025; Hasan et al., 2025; Rani et al., 2026). Traditional state-based environmental management practices are often challenged by constraints because of a fractured institutional power, lack of enforcement, and the low degree of citizen compliance (Etemire & Muzan, 2017; Berger-Walliser & Shrivastava, 2015; Park & Berger-Walliser, 2015; Antai et al., 2025; Sarwar, 2025). As a result, governments have increasingly adopted collaborative

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governance as a governance model in addressing environmental issues that go across sectoral and administrative borders.

Collaborative governance emphasises on collective decision-making, shared responsibility and common action among both state and non-state actors (Hansen et al., 2024; Dakyaga et al., 2023; Fliervoet et al., 2016; Hysing, 2022). According to this paradigm, the local governments, communities, civil society organisations, and the stakeholders of the private sector are supposed to join hands in formulating and implementing solutions to intricate problems of the people (Smit, 2018; Asaduzzaman et al., 2016; Nesti, 2020; Jansen & Kalas, 2020). However, where there are continuous enforcement lapses and coordination failures in civilian institutions, cooperation might not be sufficient to guarantee proper realisation. As a result of this inadequacy, the concept of non-traditional actors of governance has been more than welcome, in this case military, especially by use of militarised non-combat assistance to civilians in areas like disaster management, health, and environmental safeguards.

The involvement of military in the process of mitigation of environmental pollution and damage creates a specific dynamic of governance. On the one hand, the military provides the capacity to operate, organisational discipline, territorial outreach and administrative efficiency that could add to the coordination and enforcement. According to Levy (2016), Harahap (2026), Schulzke (2018), Stavrianakis & Stern (2018), On the other hand, the involvement of the military raises substantive questions on the power relations, civilian supervision, acceptance of the community and the possibility of militarisation of the role of civilian governance. Military assistance can have a significant impact on the interactions between the institutions and the perception of the population in the context of the collaborative governance even though its influence is often depicted as supportive and temporary (Gabler et al., 2017; Parker et al., 2020; Ramírez et al., 2020; Moreno & Gonçalves, 2021; Curnin et al., 2015). The available literature on collaborative environmental governance has largely focused on civilian-based alliances, and it has focused particularly on consensus-building, stakeholder participation, as well as networked coordination.

There has been relatively less emphasis put on the role of the military in being an active participant in collaborative governance processes other than those of emergency response (Bollen & Kalkman, 2022; Haque et al., 2025; Kalkman & de, 2017; Aung & Lim, 2021; Melo et al., 2015). When the military involvement has been studied, it is usually presented as a technical or operational provider and not as a decision maker, authority distributor, and social legitimizer. This scholarly gap limits our knowledge of the workings of collaborative governance in the context of the hierarchical institutions being absorbed into the multi-actor environmental management systems. It is with this context that this paper will examine collaborative governance institutions on military aid to civilian populations, and especially on environmental pollution control and damage reduction. Ansorg & Gordon (2019) said that, the study aims at questioning the role negotiation in the institution, how coordination works, the process of establishing enforcement legitimacy and the development of community acceptance during military involvement. It uses a qualitative methodological framework that prefigures the various stakeholder views in an effort to provide an empirically based understanding of the opportunities and challenges that come with incorporation of military actors into collaborative environmental governance and contributes to the theoretical discourses on collaborative governance and leads to practical policy considerations on sustainable and inclusive management of the environment.

The issue of environmental pollution and degradation of the ecosystem has become a long and complex governance issue in many countries, particularly in the developing and transitional settings (Zhang et al., 2022; Nguyen et al., 2023; Chaffin et al., 2016). The high rate of industrialization, urbanization, and population increase have encouraged the pressure of the environment, which has resulted to a poor environmental quality, increased health hazards, and socio-economic instability. Despite the availability of regulatory structures and environmental management agencies, the process of enforcing the policies of pollution control and the restoration of the environment is often haphazard and inefficient, which highlights the

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shortcomings of the traditional, sector-focused models of environmental governance and highlights the need to implement more collaborative and flexible strategies of environmental governance.

As a reaction to these issues, the idea of collaborative governance has been granted growing popularity in the field of public administration and the environmental policy research (Margerum & Robinson, 2016; Zachrisson et al., 2018). The concept of collaboration governance emphasizes the involvement of several players such as the government, non-governmental organisations, local communities, and the private sector in the processes of making joint decisions and implementation (Sicilia et al., 2016; Marín-González et al., 2022; Menashy, 2016; Nabiafjadi et al., 2021). Instead of depending on top-down dominance, collaborative governance aims at accumulating different resources, knowledge and capabilities in order to deal with complex societal issues. Collaborative governance arrangements are particularly conducive to environmental issues, which are uncertain, cross-sectoral, and competing in nature.

However, institutional capacity shortages, ineffective enforcement strategies and insufficient coordination between stakeholders often limit the realization of collaborative governance. In most environments, the environmental agencies of civilians face the structural challenges of inadequate staffing, limited enforcement power, and bureaucracies that hinder the effectiveness of the environmental policies, particularly those that need rapid response, territorial coverage and prolonged field presence. Therefore, the use of non-traditional players, that is, the military, to enhance the capacity of governance continues to be of interest to governments.

Military assistance to civilians (MAC) was conventionally linked with emergency response to disasters, humanitarian aid, and emergencies related to national security. Over the last few years, the area of military activities has been expanded to include non-traditional security issues, such as environmental conservation, pollution prevention, and ecosystem rehabilitation (Ravi, 2022; Hoang et al., 2022). The military has an organizational discipline, and logistical capability and territorial scope that makes it a potentially effective actor in responding to environmental degradation, especially in areas where civilian institutions have difficulties in the application of regulations and coordination of multi-actor responses. Although it has increased its relevance, the involvement of the military in governing the environment poses pertinent questions concerning the role of institutions, its power, as well as its democratic accountability. Although military intervention can contribute to the effectiveness of enforcement and operations it also brings in hierarchical command systems in governance system that should be participatory and deliberative. Such tension creates a governance paradox: military action may bolster the implementation capacity at the same time acting as a threat to the normative base of the civilian-led environmental governance. To this end, it is necessary to know how this paradox is realized in practice in order to gauge the efficiency and validity of the military-civilian cooperation.

METHODS

The research design used in this study is a qualitative research design, which aims at investigating and explaining the dynamics of collaborative governance in military assistance to civilians in the framework of environmental pollution and damage control. Qualitative approach is considered to be right because the study is supposed to involve the complex interaction, processes of governance and the roles of institutions that cannot be properly captured using quantitative measurement. By predicting the existence of the interpretive approach to study the phenomenon, the study will identify how collaboration is constructed, negotiated, and practiced by military and civilian actors in environmental governance and therefore facilitates a more profound view of the meaning, perceptions, and practices within the collaborative arrangements. Data collection was done using in-depth semi structured interviews with key informants who had been purposely selected and interviewed on the basis of their involvement and relevance to the environmental pollution and damage control initiatives. These informants involved military people who were involved in civil assistance operations, the representatives of civilian

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government institutions, the local authorities, environmental agencies, and local community stakeholders. Along with interviews, the analysis of documents was performed to investigate the policy frameworks, guidelines of operation, inter-agency agreements, and official reports. Such a combination of data sources contributed to triangulation and made the empirical findings more credible and rich.

Thematic analysis had been used in the data analysis process. Transcripts of interviews and documentary data were coded in a systematic manner to determine possible recurring patterns, themes, and relationships in the areas of collaborative governance mechanisms, coordination practices, role distribution, and accountability structures. This analysis was done in a cyclical manner as it went back and forth between empirical and theoretical ideas of collaborative governance to tighten up interpretations. This analytical plan has enabled the detection of enabling factors and limitations to the effectiveness of military-civilian cooperation in the management of environmental pollution and damage control. To guarantee the research rigor, a study used the qualitative trustworthiness criterion such as credibility, dependability, confirmability, and transferability. To increase the credibility, data triangulation and member checking with chosen informants were conducted to confirm the major interpretations. Dependability and confirmability were taken care of by ensuring that there was clear audit trail of the research procedure and decision made during the analysis. The transferability of the study was encouraged through the presentations of dense accounts of the research situation and the teamwork and process, which allowed the reader to evaluate the relevance of the results to the other contexts of environmental governance.

RESULTS AND DISCUSSION

The findings emerged from collaborative environmental management programs implemented in pollution-prone watershed and industrial areas where civilian agencies previously experienced weak enforcement capacity, fragmented coordination, and low community compliance. Participants consistently described that military involvement became most visible during field implementation, particularly in activities related to river clean-up operations, industrial monitoring, and inter-agency environmental enforcement. Rather than functioning merely as a technical support actor, the military reshaped coordination practices, authority relations, and public perceptions of environmental governance.

The analysis identified four interconnected themes: (1) institutional role reconfiguration and asymmetrical authority relations, (2) field-based coordination and adaptive collaboration, (3) enforcement legitimacy and coercive symbolism, and (4) negotiated community acceptance. Importantly, participants did not perceive these dynamics uniformly. While many viewed military involvement as improving implementation effectiveness, others expressed concerns regarding dependency, symbolic intimidation, and the narrowing of participatory deliberation within collaborative governance processes.

Institutional Roles and Power Relations in Collaborative Governance

One of the most salient findings concerns the reconfiguration of institutional roles and power relations within collaborative environmental governance. While civilian agencies retain formal authority over environmental regulation, military actors exercise significant informal influence due to their operational capacity and symbolic authority.

Participants reported that the involvement of the military in environmental pollution and damage control significantly reshaped institutional roles and working relationships among collaborating actors. Many described that while civilian institutions formally remained responsible for policy and regulation, the presence of the military influenced how authority was exercised in practice. Military involvement was often perceived as bringing stronger discipline, faster decision-making, and clearer direction during program implementation. A senior military officer explained,

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"We do not replace civilian institutions. Our role is to support and strengthen their programs, especially in situations that require discipline and rapid mobilization. However, our presence often helps decisions move faster on the ground." Participant 1 (Senior Officer, Military Territorial Command)

This statement reflects participants' perception that military authority functioned as an operational catalyst rather than a formal takeover of civilian governance. Civilian agencies continued to design programs and set regulatory standards, but military actors were seen as instrumental in translating these plans into concrete actions. Participants indicated that this practical division of roles helped reduce delays and increased program effectiveness.

Several civilian officials highlighted that military involvement altered power dynamics during implementation, particularly in the field. One regional environmental official noted that coordination became more decisive once military personnel were involved,

"Formally, we still lead the program, but in the field the military helps ensure that instructions are followed. Their presence makes coordination firmer and more structured." Participant 2 (Official, Regional Environmental Agency)

This perception suggests that power within collaborative governance was not solely determined by formal authority but also by operational capacity. Participants viewed this shift as largely positive, as it helped overcome bureaucratic inertia and strengthened inter-agency commitment to shared environmental goals. Community representatives also perceived changes in authority relations resulting from military participation. A community leader from an affected area explained,

"When the military is involved, instructions are taken more seriously. We feel that the program is important and must be followed, not just discussed." Participant 3 (Community Leader, Affected Area).

However, not all participants interpreted military involvement positively. Several civilian actors privately acknowledged that the strong symbolic authority of military personnel occasionally discouraged open disagreement during coordination meetings. A local civil society representative explained that some community members preferred to remain silent rather than question operational decisions when uniformed officers were present. This suggests that the effectiveness of coordination may partly derive from implicit coercive authority rather than purely collaborative consensus.

These findings expose an important tension within collaborative governance. Although military participation improved implementation capacity, it simultaneously risked narrowing deliberative space by creating unequal communicative conditions between actors. The collaboration therefore reflected not only cooperation, but also subtle forms of institutional dominance that shaped how participation was performed and negotiated in practice. Despite these positive perceptions, some participants expressed initial concern that military authority might dominate civilian voices. A civil society activist noted,

"At first, there was worry that military involvement would overshadow civilian institutions. But over time, we saw that their role was more about support than control." Participant 4 (Civil Society Activist, Environmental NGO)

This statement highlights how perceptions evolved as collaboration continued. Participants indicated that as long as civilian institutions-maintained leadership and communication remained open, the redistribution of influence did not undermine collaboration. Instead, it contributed to a more balanced and effective governance arrangement.

The perceptions of military involvement varied across participant groups. Military officers tended to frame their role in terms of operational effectiveness, discipline, and rapid mobilization. Civilian agencies generally emphasized pragmatic benefits, particularly improved coordination and enforcement capacity. In contrast, civil society actors expressed more cautious perspectives,

especially regarding the long-term implications of dependency on military-supported governance. Community responses were similarly mixed and often pragmatic; acceptance frequently emerged not from ideological support for military involvement, but from perceptions that environmental programs became more visible, organized, and responsive after military participation increased.

Coordination Mechanisms and Inter-Agency Collaboration

The study reveals that coordination between military and civilian institutions relies heavily on informal mechanisms, such as joint task forces, routine field-level communication, and ad hoc problem-solving forums. Formal coordination frameworks exist but are often insufficient to address rapidly evolving environmental challenges.

Participants reported that coordination between military and civilian institutions played a central role in determining the effectiveness of environmental pollution and damage control efforts. Many described that coordination improved significantly once military actors became actively involved, particularly at the implementation level. Rather than relying solely on formal meetings or written directives, coordination was often carried out through direct communication and joint activities in the field. A regional environmental agency official explained,

> *"Coordination meetings are important, but what really works is coordination in the field. When the military is present on the ground, communication becomes faster and actions can be taken immediately."* Participant 5 (Official, Regional Environmental Agency)

This statement reflects participants' perception that practical, field-based coordination was more effective than formal bureaucratic procedures. Participants emphasized that direct interaction during joint activities allowed institutions to respond quickly to environmental problems, clarify responsibilities, and avoid misunderstandings that often occurred through formal channels alone.

Several participants highlighted that military involvement helped strengthen inter-agency cooperation by creating a clearer chain of coordination during operations. A local government official noted,

> *"When multiple agencies are involved, coordination can be confusing. The military helps organize the workflow so everyone knows what to do and when to do it."* Participant 6 (Local Government Officer, Environmental Affairs)

This perception suggests that military coordination capacity contributed to a more structured collaborative process. Participants viewed the military's organizational skills as helping align the actions of various agencies, reducing overlap and improving efficiency in joint environmental programs.

Participants also reported that coordination fostered stronger relationships and trust among institutions. Working together in the field created opportunities for informal communication and mutual understanding. A military officer involved in coordination activities stated,

> *"By working together directly, we understand the limitations and strengths of civilian agencies better. This makes coordination smoother in future activities."* Participant 7 (Military Officer, Field Operations Unit)

This response illustrates how coordination extended beyond task management to relationship building. Participants indicated that repeated collaboration helped reduce institutional barriers and encouraged a more cooperative working culture among agencies involved in environmental management.

Despite the overall positive experiences, some participants acknowledged challenges in maintaining consistent coordination. Differences in institutional procedures and leadership styles occasionally created confusion, especially when coordination depended heavily on

personal relationships. However, most participants agreed that the benefits of direct, collaborative coordination outweighed these challenges.

Military Assistance and Enforcement Legitimacy

Another critical theme emerging from the findings is the role of the military in enhancing enforcement legitimacy. Environmental regulations often suffer from weak compliance due to limited monitoring capacity and low deterrence. The presence of military personnel alters stakeholder behavior and increases perceived enforcement credibility.

Participants reported that military involvement significantly influenced how environmental rules and regulations were perceived and followed by communities and other stakeholders. Many described that before military assistance was introduced, enforcement efforts were often seen as weak and inconsistent. With the presence of the military, environmental programs gained greater seriousness and credibility. A community leader from an affected area stated,

> *"Before, warnings from civilian officers were often ignored. When the military became involved, people paid more attention because they felt the rules were really being enforced."* Participant 8 (Community Leader, Riverbank Settlement)

This statement reflects participants' perception that military presence strengthened the legitimacy of environmental enforcement. Participants emphasized that compliance improved not necessarily because of fear, but because military involvement signaled strong commitment and consistency in implementing environmental regulations.

Several participants from civilian institutions highlighted that military assistance helped reinforce their authority when dealing with resistant actors, particularly industrial facilities and repeat violators. An environmental agency officer explained,

> *"When we conduct inspections together with the military, industries tend to cooperate more. They are more open and responsive compared to inspections conducted by civilian officers alone."* Participant 9 (Environmental Monitoring Officer, Regional Environmental Agency)

Importantly, participants did not always distinguish clearly between legitimacy and compliance. In many cases, increased public obedience appeared to stem less from normative agreement with environmental rules and more from the symbolic authority associated with military presence. Several participants admitted that industries and local residents became more responsive because military involvement signaled stronger monitoring capacity and potential sanctions.

This finding suggests that the legitimacy produced within military-assisted environmental governance may be partly instrumental rather than fully participatory. Compliance was often achieved through perceptions of discipline, deterrence, and institutional seriousness rather than through deep procedural trust alone. While this mechanism may strengthen short-term enforceability, it raises important questions regarding the sustainability of collaborative environmental governance once military presence is reduced.

Participants also noted that military assistance contributed to improved discipline during environmental activities, such as clean-up operations and monitoring programs. A military officer involved in enforcement activities remarked,

> *"Our presence helps maintain discipline during operations. People follow procedures more carefully, and activities run according to plan."* Participant 10 (Military Officer, Environmental Task Unit)

This perception indicates that military discipline played an important role in ensuring that environmental actions were implemented as intended. Participants described this discipline as creating a more orderly and focused working environment, which supported effective collaboration among stakeholders.

Despite these positive perceptions, some participants cautioned against over-reliance on military presence for enforcement. A civil society representative expressed concern that compliance driven solely by authority might not lead to long-term behavioral change,

> *"Military involvement helps in the short term, but lasting change requires awareness and commitment from the community, not just enforcement."* Participant 11 (Civil Society Representative, Environmental Advocacy Group)

This statement highlights participants' recognition of the limits of authority-based enforcement. While military assistance was widely perceived as enhancing legitimacy and compliance, participants emphasized the importance of combining enforcement with education and community engagement to ensure sustainable environmental protection.

Participants perceived military assistance as a key factor in strengthening enforcement legitimacy within collaborative environmental governance. The presence of the military increased compliance, reinforced civilian authority, and improved discipline during environmental activities. However, participants also emphasized that military enforcement should complement, rather than replace, civilian-led education and participatory approaches to achieve long-term environmental sustainability.

Community Engagement and Social Acceptance

Community acceptance emerged as a determining factor influencing the success of military–civilian collaboration. While initial resistance was reported, sustained engagement and transparent communication helped mitigate concerns regarding militarization.

Participants reported that community engagement and social acceptance were critical factors influencing the success of military–civilian collaboration in environmental pollution and damage control. Many participants described that community reactions to military involvement were initially mixed. Some community members expressed hesitation and concern, particularly due to fears of excessive control or reduced participation. However, these perceptions gradually changed as interaction and communication increased. A civil society activist explained,

> *"At the beginning, people were worried that the military would dominate the program and limit community participation. There was fear and uncertainty."* Participant 12 (Civil Society Activist, Environmental NGO)

This statement reflects the initial skepticism experienced by communities when military actors entered environmental governance spaces traditionally managed by civilian institutions. Participants noted that such concerns were rooted in past perceptions of military authority rather than in direct experience with the program itself.

As collaboration progressed, many participants observed a shift in community attitudes. Increased transparency, direct engagement, and joint activities helped communities develop a more positive view of military involvement. A community representative described this change,

> *"After working together in clean-up activities and meetings, people began to feel more comfortable. We saw the military not as controllers, but as partners."* Participant 13 (Community Representative, Riverbank Neighborhood)

This response suggests that social acceptance was built through consistent interaction and shared experiences. Participants emphasized that participation in joint environmental activities helped reduce social distance and fostered trust between communities and military personnel.

Participants also highlighted that inclusive engagement strategies encouraged greater community participation. When community members were invited to voice concerns, contribute ideas, and take part in decision-making, acceptance increased. A local government facilitator noted,

"When communities were involved in discussions and planning, they felt respected. This made them more willing to support the program, even with military involvement." Participant 14 (Community Facilitator, Local Government)

This perception indicates that social acceptance was closely linked to participatory practices. Participants stressed that military actors who adopted a communicative and cooperative approach were more readily accepted by communities.

Despite the overall positive shift, some participants acknowledged that acceptance varied across communities. Areas with limited prior interaction with military-led social programs tended to take longer to build trust. However, most participants agreed that sustained engagement gradually reduced resistance and strengthened cooperation.

Nevertheless, community acceptance remained uneven and conditional across different local contexts. Some participants indicated that support for military involvement was driven more by pragmatic considerations than by genuine trust in militarized governance arrangements. In several communities, acceptance emerged because military-supported programs were perceived as more effective and resourceful than previous civilian-led initiatives, rather than because communities fully endorsed the expanded governance role of military actors.

These findings suggest that social acceptance in collaborative environmental governance should not be understood as a linear transition from resistance to trust. Instead, acceptance was continuously negotiated and shaped by local experiences, perceived benefits, historical relations with state authority, and the availability of alternative governance mechanisms.

Collaborative Governance Between Participation and Hierarchical Authority

The findings of this study demonstrate that collaborative environmental governance involving military assistance to civilians cannot be understood solely through conventional assumptions of horizontal participation and consensual interaction among relatively equal actors. Instead, the study reveals a more complex governance configuration in which collaborative mechanisms coexist with asymmetrical authority relations, operational hierarchy, and symbolic coercive capacity. This finding both supports and extends existing collaborative governance scholarship by showing that, in contexts characterized by weak civilian enforcement capacity and fragmented institutional coordination, collaborative arrangements may evolve into hybrid governance structures that combine participatory coordination with hierarchical enforcement mechanisms.

The study confirms earlier arguments advanced by Emerson and Nabatchi and Ansell and Gash that collaborative governance is often shaped by institutional interdependence, trust-building, and shared problem-solving processes. However, unlike much of the collaborative governance literature that emphasizes relatively balanced actor relationships, the present findings demonstrate that collaboration in practice may function under conditions of substantial power asymmetry. Military actors possessed organizational discipline, territorial reach, and symbolic authority that significantly influenced coordination processes and stakeholder responsiveness. As a result, the collaborative arrangement observed in this study was not entirely horizontal, but partially hierarchical in operational practice.

This finding is particularly important because previous studies on collaborative environmental governance have predominantly focused on civilian-centered partnerships involving government agencies, communities, and non-governmental organizations. Studies by Emerson et al. (2012) and Bryson et al. (2015) generally conceptualize collaboration as a process driven by deliberation, mutual trust, and consensus-oriented interaction. In contrast, the present study suggests that collaborative governance in institutionally fragile settings may depend not only on consensus but also on strategically accepted asymmetrical authority structures. Military participation accelerated implementation and strengthened coordination precisely because military actors possessed exceptional organizational and symbolic influence that civilian institutions lacked.

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At the same time, the findings reveal a significant governance paradox. Although military involvement improved operational effectiveness, it also introduced tensions regarding deliberative equality and civilian institutional autonomy. Participants acknowledged that military presence occasionally discouraged open disagreement during coordination processes and influenced how authority was negotiated among actors. This finding resonates with civil–military relations scholarship, particularly the arguments of Samuel P. Huntington and Peter D. Feaver concerning the persistent tension between military effectiveness and civilian democratic control. However, unlike classical civil–military literature that focuses primarily on national security governance, this study extends those debates into the field of environmental governance by demonstrating how military authority can reshape participatory governance arrangements even in non-security policy sectors.

The findings also contribute to debates regarding legitimacy within collaborative governance. Existing collaborative governance literature often associates legitimacy with participation, procedural fairness, and stakeholder inclusion. However, the present study demonstrates that legitimacy within military-assisted environmental governance was more ambiguous and layered. Increased compliance did not always emerge from normative agreement with environmental regulations, but often from perceptions of military discipline, enforcement seriousness, and institutional authority. This distinction is theoretically important because it suggests that compliance, deterrence, and legitimacy should not be treated as interchangeable concepts.

The findings therefore align partially with studies on coercive and instrumental legitimacy in governance systems, which argue that state authority may generate short-term compliance without necessarily producing long-term normative trust. In this case, industries and local communities appeared more responsive when military actors participated in environmental enforcement activities, yet some participants admitted that this responsiveness partly reflected symbolic pressure rather than purely voluntary cooperation. Consequently, the study suggests that military participation may strengthen practical enforceability while simultaneously creating risks of dependency on authority-based governance mechanisms. This observation refines collaborative governance theory by highlighting that governance effectiveness and participatory legitimacy may exist in tension rather than in harmony.

Another important contribution concerns the issue of community acceptance. Previous studies on collaborative environmental governance frequently describe public participation as a process that gradually builds trust and collective ownership. While the present study also identified increasing community acceptance over time, the findings indicate that acceptance was neither uniform nor entirely trust-based. Community support often emerged pragmatically because military-supported programs produced visible environmental improvements, faster implementation, and stronger enforcement against polluting actors. In several cases, acceptance remained conditional and dependent on the continued delivery of tangible benefits.

This finding differs from more optimistic participatory governance literature that tends to frame community engagement as a linear progression from inclusion to empowerment. Instead, the study demonstrates that acceptance in militarized collaborative governance contexts is dynamic, negotiated, and shaped by local perceptions of state authority, institutional performance, and practical necessity. Communities did not simply internalize military participation as normatively desirable; rather, many viewed it as an effective response to governance failures previously experienced under fragmented civilian coordination systems. This reveals that public acceptance in collaborative governance may be driven as much by pragmatic governance outcomes as by participatory ideals.

The study further demonstrates that perceptions of collaboration varied significantly across participant groups. Military personnel consistently emphasized operational necessity, discipline, and rapid mobilization, whereas civilian agencies focused on practical governance benefits such as improved coordination and enforcement support. In contrast, civil society actors

expressed more cautious perspectives regarding the long-term implications of military normalization within civilian governance spaces. This divergence illustrates that collaborative governance should not be interpreted as a fully unified institutional arrangement, but rather as a negotiated political process shaped by competing institutional logics and varying interpretations of legitimacy.

From a theoretical perspective, the study contributes to collaborative governance scholarship by proposing that collaborative arrangements under weak institutional capacity may evolve into hybrid governance configurations that combine participatory mechanisms with hierarchical coordination practices. Existing collaborative governance frameworks often assume that successful collaboration depends upon relatively equal actor participation and consensus-oriented interaction. However, the present findings indicate that effectiveness in complex environmental governance settings may partly depend upon strategically tolerated asymmetrical authority relations. The study therefore expands collaborative governance theory by demonstrating that collaboration and hierarchy are not always mutually exclusive but may coexist in adaptive governance arrangements under specific institutional conditions.

Practically, the findings provide important policy implications for governments implementing military assistance programs in civilian environmental governance. First, military involvement may strengthen implementation capacity, coordination efficiency, and enforcement responsiveness in contexts where civilian institutions experience operational limitations. Second, however, the findings suggest that long-term sustainability depends upon preserving civilian leadership, maintaining participatory mechanisms, and preventing excessive institutional dependency on military actors. Collaborative environmental governance should therefore ensure that military participation remains complementary rather than substitutive. Clear role boundaries, transparent accountability structures, and inclusive deliberative mechanisms are essential to prevent the gradual erosion of civilian governance autonomy.

The study also has several limitations. The findings are derived from qualitative analysis within a specific governance context and therefore may not be fully generalizable to all environmental governance settings. In addition, participant perceptions may have been shaped by local political conditions and prior experiences with military institutions. The study primarily examined governance dynamics rather than measurable environmental outcomes, meaning that the long-term ecological effectiveness of military-assisted collaboration remains uncertain.

Future research should therefore investigate comparative cases across different environmental sectors and governance systems to examine how varying political contexts shape military–civilian collaboration. Further studies could also explore how communities negotiate legitimacy under different forms of authority-based governance and assess whether military-supported environmental governance produces durable behavioral change after military presence declines. Comparative longitudinal research would be particularly valuable in evaluating whether collaborative arrangements involving military actors strengthen or weaken long-term civilian institutional capacity over time.

CONCLUSION

This paper has established that collaborative governance with military support to the civilians could escalate the success of environmental pollution and damage control through better coordination, speeding up the process, and enhancing enforcement legitimacy, especially in the situations when the institutional capacity of civilians is low. Whereas the civilian agencies have formal authority, military actors have strong informal power at the implementation level, which results in asymmetries of power that are tolerated as a pragmatic way of overcoming the gap in governance but that need to be managed carefully lest they lead to the institutional dependency and the unintended militarization of environmental governance. The results underscore the fact that effective cooperation requires proper role definition, flexible field-based coordination, and open community participation that builds social acceptance and collective responsibility. Through empirical research of the incorporation of a non-traditional actor into the structure of

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collaborative governance arrangements, the present study would add to a more refined conceptualization of collaboration in real-life conditions and emphasize the significance of preserving a civilian leadership style and participatory ideals to achieve the results of a sustainable and legitimate environmental governance.

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