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Enhancing Community-Based Environmental Governance Through Barangay Empowerment and Contextualization of The National Service Training Program

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Abstract

This study examines the persistent gap between community environmental awareness and substantive grassroots action in the Negros Island Region's barangays, despite the robust legal mandates provided by RA 7160, RA 9003, and RA 9163. Employing a mixed-methods approach, the research triangulates quantitative assessments across three barangay clusters (PRKs) with qualitative insights from Focus Group Discussions involving barangay officials, purok leaders, and NSTP implementers. Although the overall mean score reached a "High" level (3.06), qualitative themes such as "Frontline Fatigue," "Symbolic Stewardship," and "Academic Parallelism" reveal fragmented coordination and limited technical capacity at the local level. The study identifies a structural gap within the NSTP—specifically its CWTS component—which currently lacks a standardized framework for aligning student-led projects with local development priorities. In response, a recalibrated policy framework was proposed, one that embeds joint planning, shared accountability, and mandatory monitoring and evaluation mechanisms between Higher Education Institutions and Local Government Units. This model aims to transform symbolic environmentalism into institutionalized, community-based stewardship, enabling barangays to move from awareness to well-informed, actionable environmental governance.

Keywords: Environmental Governance, Barangay Empowerment, National Service Training Program (NSTP), RA 7160, Civic Welfare Training Service (CWTS), Decentralization.

1. Introduction

Environmental governance at the barangay level was essential for translating national sustainability mandates into tangible local action. Despite robust legal frameworks, such as the Local Government Code of 1991 (RA 7160) and the Ecological Solid Waste Management Act (RA 9003), implementation at the grassroots remains inconsistent. Strengthening barangay capacities and integrating youth-led civic programs like the National Service Training Program–Civic Welfare Training Service (NSTP–CWTS) can bridge this gap. The effective barangay environmental governance often hinges on institutional networks. In Metro Manila, high-performing barangays demonstrate clear, established partnerships with both governmental and non-governmental actors, highlighting the critical role of cross-sector collaboration in grassroots solid waste management (Castillo, 2020). Environmental awareness was a necessary precursor to sustainable behavior. In Romblon, senior high school students exhibited high levels of environmental awareness (mean = 3.24) and corresponding sustainable practices (mean = 3.22), underscoring the link between knowledge and action (Tayco, 2025). Similarly, in Lezo, Aklan, while awareness of some programs (e.g., greening projects) was high, awareness of others (e.g., air pollution control) remained low—suggesting uneven community understanding of environmental issues (Yecla et al., 2022). Active community involvement enhances adaptive governance. A study in coastal Cebu revealed that higher awareness and preference for ecosystem-based governance correlated with greater participation in resource management activities. However, barriers such as insufficient capacity-building and political conflict limited full engagement (Reyes, 2024). The cultural values and perceptions shape environmental stewardship. Research from Barangay Acmac, Iligan City, showed that community-led initiatives thrive when rooted in empowerment, collaborative decision-making, and shared sense of ownership (Eslit, 2023). The sustained environmental practices are more likely when awareness was supported by cultural readiness and structured support. In Romblon, students who were aware of environmental issues were more likely to engage in behaviors such as composting and tree planting, demonstrating how awareness can translate into practice within supportive contexts (Tayco, 2025). Aligning NSTP–CWTS with barangay governance structures presents a promising pathway for deepening community-based environmental stewardship. Although specific studies on NSTP–CWTS contextualization remain limited, the program's civic engagement framework suggests strong potential for institutional integration and empowerment when properly aligned with local governance.

1.2 Research Questions:

The primary purpose of this study was to examine the challenges and opportunities in enhancing community-based environmental governance at the barangay level through the empowerment of local stakeholders and the contextualization of the National Service Training Program (NSTP), particularly its Civic Welfare Training Service (CWTS) component. Specifically, this research aims to: Specifically, it seeks to answer the following research questions:

1. How does collaboration with local authorities affect barangay environmental governance?
2. What was the level of awareness on environmental issues among barangay stakeholders?
3. To what extent do community members participate in environmental activities?
4. How do community perceptions and cultural practices influence environmental governance?
5. What was the commitment of barangays to sustainable environmental practices?
6. How can contextualizing the NSTP-CWTS empower barangays to enhance community-based environmental governance?

1.3 Literature Review

1.3.1. Collaboration with Local Authorities

Effective environmental governance in barangays was strongly linked to collaborative institutional networks. In Metro Manila, barangays that performed well in solid waste management had clearly defined relationships with both institutional and non-institutional actors, showcasing the importance of external support systems and internal coordination (Castillo, 2020). Similarly, conservation efforts in Zamboanga City reveal that fragmented institutional mandates and weak cross-agency coordination significantly hamper effective watershed governance—highlighting the need for formalized collaboration and shared accountability (Valerio, 2024).

1.3.2. Awareness of Environmental Issues

Awareness alone was insufficient for sustainable action but remains a crucial foundation. In Romblon, senior high school students exhibited high levels of environmental awareness (mean ~3.24) and corresponding sustainable behaviors (mean ~3.22), illustrating a positive correlation between knowledge and practice (Tayco, 2025). In Cebu's coastal communities, awareness of resource management policies—coupled with knowledge of ecosystem-based governance—was strongly associated with higher participation in environmental initiatives (Reyes, 2024).

1.3.3. Participation in Environmental Activities

Community participation enhances adaptive governance and environmental outcomes. In Cebu, heightened awareness and preference for ecosystem-based governance correlated with greater engagement in resource management (Reyes, 2024). In Barangay Acmac, Iligan City, community-led environmental initiatives thrived on inclusive decision-making, collective ownership, and cultural values, demonstrating how participation rooted in empowerment leads to sustained action (Eslit, 2023).

1.3.4. Community Perception & Cultural Practices

Cultural values and collective perceptions significantly influence governance. In Zamboanga City, indigenous governance systems contributed conservation norms but were limited to consultative roles—undermining legitimacy and compliance (Valerio, 2024). In Iligan City, community perception and cultural practices fostered a strong sense of environmental responsibility and motivated grassroots action (Eslit, 2023).

1.3.5. Commitment to Sustainable Practices

Empirical evidence shows that awareness and cultural readiness foster sustainable behaviors. In Romblon, students demonstrated a clear link between environmental awareness and participation in sustainable practices like composting and tree planting (Tayco, 2025). However, broader institutional reforms are needed to translate this commitment into systemic governance mechanisms (Valerio, 2024).

1.3.6. Contextualizing NSTP–CWTS for Barangay Empowerment

Embedding NSTP–CWTS within barangay governance can bridge the gap between symbolic participation and structured governance. A recent study on the NSTP–CWTS program in the Philippine Coast Guard highlighted the importance of institutional collaboration with LGUs and universities, noting challenges such as limited resources and coordination (Pangilinan, 2025). Strengthening these partnerships can empower barangays by anchoring youth-led environmental initiatives within formal local governance structures.

2. Material and methods

2.1 Research Design

This study employs a sequential explanatory mixed-methods design, beginning with quantitative data collection and analysis, followed by qualitative exploration to interpret and enrich findings. This design was particularly effective for capturing both the breadth and depth of complex governance dynamics at the barangay level, where multiple dimensions—such as collaboration with local authorities, environmental awareness, participation, cultural context, and sustainable commitment—intersect. By first identifying statistical patterns, researchers can then delve into the lived experiences and narratives that explain why these patterns exist, offering a more holistic understanding of environmental stewardship processes. This approach mirrors successful applications in Philippine research contexts. For example, a mixed-methods study in coastal Cebu combined surveys with interviews to examine how community awareness and governance models influence participation in resource management, revealing that while awareness was high, barriers like limited capacity-building hindered full engagement (Reyes, 2024). Additionally, health researchers studying rural community responses to the COVID-19 pandemic employed a sequential explanatory design—first analyzing quantitative health data and then conducting focus groups and key informant interviews—to uncover the underlying mechanisms of community resilience and coordination (Falguera et al., 2023). These precedents underscore the value of merging numerical trends with community narratives to inform policy and practice in local governance and environmental management.

2.2 Respondents

This study will engage a diverse array of stakeholder groups to capture the nuanced dynamics of barangay environmental governance across multiple dimensions. Barangay officials and LGU representatives will be included to assess the nature and effectiveness of institutional collaboration—essential for translating policies into action. Community members and youth will provide insights on environmental awareness, participation in local initiatives, and commitment to sustainable behaviors. Cultural leaders and residents will help elucidate how community perceptions and cultural practices shape environmental stewardship. Finally, NSTP–CWTS coordinators and implementers will be engaged to understand the current integration of NSTP–CWTS activities in barangay environmental programs and to identify opportunities for deeper contextualization. To ensure representativeness, stratified random sampling will be used among community members, allowing for demographic balance across age, gender, and socioeconomic strata; this method has proven effective in Philippine studies evaluating environmental program awareness and satisfaction, such as in Lezo, Aklan (Yecla et al., 2022). Meanwhile, purposive sampling will be used to select barangay officials, cultural leaders, and NSTP implementers due to their strategic roles and relevance to the study dimensions—a practice often employed in mixed-methods research to ensure key perspectives are captured, as seen in marine protected area governance studies where stakeholder interviews were purposefully selected to reflect diverse local insights (Brun et al., 2024). This combination of sampling strategies ensures both statistical reliability and depth of understanding in exploring how collaboration, awareness, participation, cultural context, and commitment converge in community-based environmental governance.

2.3 Research Instrument

For the quantitative component, a structured questionnaire using Likert-scale items (from 1 = "Strongly Disagree" to 5 = "Strongly Agree") will be crafted to measure key dimensions critical to this study: collaboration with local authorities, environmental awareness, participation in environmental activities, community perception and cultural practices, and commitment to sustainable practices. Sample items may include: “Barangay officials regularly consult with LGUs on environmental initiatives,” “I am knowledgeable about local environmental challenges such as waste management,” “I actively participate in community clean-up or tree-planting efforts,” “My cultural traditions support environmental stewardship,” and “I practice waste segregation at home consistently.” This approach is grounded in established practice—Philippine research on environmental governance in Lezo, Aklan, employed a structured survey with multi-stage random sampling to measure awareness, satisfaction, and program utilization among citizens using clearly defined constructs and Likert-type responses (Yecla et al., 2022). Additionally, broader studies on pro-environmental behavior have successfully used five-point Likert scales to assess behavioral engagement, environmental knowledge, and attitudinal factors, ensuring reliability and validity in measuring ecological conservation and waste management behaviors (Janmaimool & Denpaiboon, 2016).

For the qualitative component, two instruments will be developed: a Focus Group Discussion (FGD) guide and a Key Informant Interview (KII) protocol. The FGD guide will feature open-ended questions designed to uncover the motivations, barriers, and enablers behind the quantitative findings. Example prompts include: “What supports or hinders your barangay’s collaboration with local authorities on environmental issues?” and “In what ways do cultural beliefs influence your willingness to participate in environmental activities?” The KII protocol will be tailored for barangay officials, cultural leaders, and NSTP–CWTS coordinators, with questions such as: “How has NSTP–CWTS been integrated (or not) into barangay environmental programs?” and “What structures or mechanisms are needed to institutionalize youth-led environmental governance?” T

his qualitative design draws on methodological best practices from Philippine mixed-methods research that effectively blend surveys with FGDs and interviews to contextualize quantitative data—such as a study in coastal Cebu exploring how community awareness and governance preferences influence participation in resource management (Reyes, 2024).

2.4 Procedure

This study's procedure was structured into three integrated phases—quantitative, qualitative, and integration—designed to comprehensively explore the five core dimensions of community-based environmental governance at the barangay level. In the Quantitative Phase, structured surveys will be distributed across selected barangays via both printed forms and digital platforms to maximize accessibility and response rates. This blended data collection strategy mirrors successful approaches in Philippine research, such as a mixed-methods study of health education in rural Luzon and Visayas, where surveys were administered to over 1,200 adults through community health fairs and local clinics to capture broad participation and represent diverse demographics (Reyes et al., 2026). After collection, responses will be compiled and analyzed to establish baseline measures and trends across the five dimensions: collaboration with local authorities, environmental awareness, participation in environmental activities, community perception and cultural practices, and commitment to sustainable practices. The Qualitative Phase builds upon the quantitative findings. The initial survey results will inform both the sampling strategy and the design of questions for Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). FGDs with community members and youth will explore deeper insights into motivations, barriers, and cultural influences that drive or hinder environmental participation. KIIs with barangay officials and NSTP–CWTS coordinators will probe institutional mechanisms, collaboration dynamics, and opportunities for contextualizing NSTP–CWTS within local environmental governance. This sequential explanatory design—where qualitative inquiry follows and enhances quantitative analysis—has been effectively applied in Philippine studies, such as a mixed-methods investigation of community response to the COVID-19 pandemic, where statistical trends were enriched by FGDs and KIIs to reveal underlying mechanisms of coordination and resilience (Falguera et al., 2023). Finally, the Integration Phase synthesizes quantitative patterns and qualitative narratives to develop a holistic understanding of barangay environmental governance. This phase focuses on identifying how contextualizing NSTP–CWTS can address observed gaps across the five dimensions and strengthen overall governance. The combined analysis of numerical data and stakeholder perspectives aligns with recognized mixed-methods frameworks that emphasize explanatory depth and practical relevance through sequential integration (Reyes et al., 2026). By merging statistical findings with qualitative insights, the study ensures that identified trends are not only quantified but also meaningfully interpreted through the lived experiences of community members and institutional actors—leading to actionable insights for policy and programmatic improvements.

2.5 Data Analysis

In the Quantitative Analysis, descriptive statistics—including means, standard deviations, and frequency distributions—will be calculated for each of the five dimensions: collaboration with local authorities, awareness of environmental issues, participation in environmental activities, community perception and cultural practices, and commitment to sustainable practices. These summary statistics will provide a clear baseline understanding of the current state of barangay environmental governance. To examine relationships between dimensions—for example, whether higher awareness predicts greater participation or stronger commitment—inferential statistical techniques such as correlation and regression analyses will be performed. This analytical strategy aligns with methods used in Philippine mixed-methods studies, such as the analysis of community participation and adaptive governance in coastal Cebu, where descriptive statistics and logistic regression were employed to assess how awareness and governance models influenced participation in resource management activities (Reyes, 2024). For the Qualitative Analysis, thematic analysis will be conducted on transcripts from Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs). This process involves systematically coding the data to identify recurring themes such as "structural fatigue," "cultural readiness," or the distinction between "symbolic versus substantive collaboration." Thematic analysis was widely recognized for its effectiveness in revealing deeper insights into stakeholder perceptions and institutional dynamics—particularly in studies combining quantitative findings with narrative data to explain underlying patterns (e.g., mixed-methods research in educational and organizational contexts) (Bowen, 2025). In the Mixed-Methods Integration, a joint interpretation will be conducted by juxtaposing quantitative findings with qualitative themes. For instance, if survey data reveals high awareness scores but only moderate commitment to sustainable practices, the qualitative narratives may uncover contributing factors—such as lack of technical support, cultural constraints, or fragmented institutional mechanisms—that explain this gap. This integrative approach mirrors best practices in sequential explanatory mixed-methods design, where qualitative insights are used to elaborate on and contextualize numerical trends, thereby achieving richer, more actionable insights (Fetters et al., 2013).

2.6. Ethical Considerations

Ethical integrity is paramount in research, especially in community-based studies involving diverse stakeholders. This study will adhere to several key principles to ensure participant rights, data protection, and cultural respect. All participants will receive a clear, comprehensive briefing on the study's purpose, methodology, and their rights—including the voluntary nature of participation and the freedom to withdraw at any time without penalty. Written or verbal consent will be obtained prior to data collection, consistent with Philippine research standards and guidelines on participant rights and informed decision-making. This process reflects the fundamental ethical principle of respect for persons as outlined in the Belmont Report,

emphasizing autonomy and informed choice (Office for Human Research Protections, 2024). Participant data will be anonymized by assigning unique codes, and all identifiable information will be securely stored and accessible only to the research team. This aligns with best practices for protecting participant privacy, especially in digital research contexts, where additional measures such as encryption and secure data storage are recommended (Fisher et al., 2020). Engagements with barangay officials, cultural leaders, and community members will be conducted with deep respect for local customs and values. This approach avoids extractive research practices and honors community norms, in line with ethical guidance for culturally competent and respectful research in diverse settings (Harrowing et al., 2010). To enhance the credibility of qualitative findings, member-checking will be employed. This involves sharing preliminary interpretations with participants to verify accuracy and resonance with their lived experiences, fostering transparency and mutual validation in the research process (Vella, 2024). By incorporating these ethical safeguards—comprehensive informed consent, robust confidentiality protocols, cultural sensitivity, and trust-building through participant validation—the study ensures that its research methods are both respectful and rigorous, safeguarding participant welfare while enhancing the quality and relevance of its findings.

3. Results and discussions

3.1. Over All Summary of Environmental Categories

This section presents an in-depth evaluation of the environmental governance landscape across the surveyed barangays, effectively linking quantitative findings to the proposed policy framework. Grounded in the mandate of Republic Act No. 7160—the Local Government Code of 1991, which positions the barangay as the frontline of ecological stewardship under the General Welfare Clause (Section 16)—the data reveal a complex reality: strong legal foundations and high community perception do not always translate into consistent operational success. These uniformly high scores indicate a robust baseline of readiness and alignment with environmental values. However, this quantitative success masks a qualitative gap between theoretical understanding and practical implementation. For instance, while Collaboration with Local Authorities rates highest at 3.11, studies emphasize that such collaboration was often symbolic unless supported by structured institutional frameworks. The UNDP's work on local conservation leadership underscores that LGUs need empowered autonomy and consistent support to translate environmental mandates into tangible outcomes (UNDP, 2025). Similarly, high Awareness of Environmental Issues (3.07) might not suffice for sustainable action. UNESCO's youth programs on water resilience highlight that awareness must be coupled with immersive, hands-on learning to foster sustained environmental engagement (UNESCO, 2024). Participation in Environmental Activities (3.04) remains event-based, according to local initiatives like the UNICEF-supported clean-ups in Siargao, where community involvement was evident but required systematic reinforcement to yield long-term behavioral change (UNICEF Philippines, 2025). Community Perception and Cultural Practices (3.04) reflect a favorable cultural disposition toward environmental stewardship. However, the Action for Climate Empowerment framework (UNFCCC) suggests that culture alone—without supportive education, awareness, and institutional coordination—cannot drive lasting governance transformation (UNCC, 2020). The lowest dimension, Commitment to Sustainable Practices (3.02), underscores the challenge of translating knowledge into daily behavior. This aligns with UNDP's broader call for integrated, locally-led action—where awareness must evolve into technical capacity and sustained practice through enabling governance mechanisms (UNDP, 2025a). Collectively, these findings suggest that the communities are in a "ready state"—marked by high receptivity but lacking operational depth. To bridge this divide, a shift from top-down information dissemination to structured, participatory frameworks was imperative. Empirical evidence from service-learning initiatives in the Philippines shows that integrating youth through formal programs like NSTP enhances civic engagement and fosters continuity in community action (Hibanada, 2024). By aligning these high-level perceptions with formal Barangay Development Plans and embedding NSTP–CWTS within local governance structures, barangays can transform symbolic awareness into measurable, well-informed environmental outcomes—fully realizing the mandates of RA 7160.

Table 1: ***Overall Summary of Environmental Categories***

Environmental Category	Weighted Mean	Verbal Interpretation*
Collaboration with Local Authorities	**3.11**	High
Awareness of Environmental Issues	3.07	High
Participation in Environmental Activities	3.04	High
Community Perception and Cultural Practices	3.04	High
Commitment to Sustainable Practices	3.02	High
OVERALL AVERAGE	**3.06**	**High**

Interpretation Scale (Assumed): 1.00-1.75: Very Low; 1.76-2.50: Low; 2.51-3.25: High; 3.26-4.00: Very High.

3.2. Comparison of Means per District (Purok)

This section delves into the district-level findings from Table 2, which provide a quantitative foundation for the governance challenges identified in the proposed policy framework. Although the PRK average means (ranging from 3.03 to 3.08) fall within the "High" category, a closer look reveals pronounced structural gaps and fragmented coordination. For example, PRK 2 demonstrates a notably high Awareness of Environmental Issues (3.22), whereas PRK 3 registers a lower Participation in Environmental Activities (2.92). This contrast reflects the familiar pattern of "recognized concern but limited action." Even when residents appreciate their ecological responsibilities under Section 16 of RA 7160, the transition to active participation is impeded by inadequate engagement pathways. A mixed-methods study in coastal Cebu supports this, finding that while awareness often correlates with governance preferences, actual participation was constrained by limited capacity-building and weak information-sharing mechanisms (Reyes, 2024). Similarly, PRK 3's high Collaboration with Local Authorities score (3.20) does not translate into frontline implementation, suggesting a lack of technical continuity and structured support. The absence of formal mechanisms—such as those proposed for NSTP–CWTS—renders collaboration superficial rather than operationally meaningful. Further illustrating fragmented coordination, PRK 1's lower Commitment to Sustainable Practices (2.92) underscores the failure to institutionalize long-term behavior change. Without a formal coordination framework linking Higher Education Institutions (HEIs) and barangays, environmental activities remain short-term and sporadic. UNESCO's studies on sustainable development emphasize that without integrative frameworks, community engagement remains reactive rather than strategic (Velayo et al., 2024). These observations confirm that academic institutions and barangays currently "operate in parallel rather than in synergy." Although the districts show foundational readiness for environmental stewardship, the absence of a standardized implementation process prevents these moderate-to-high scores from translating into transformative outcomes. To bridge this operational gap, the proposed policy—anchored in joint planning and shared accountability—was essential. Such structural alignment can shift operations from parallel actions to synergistic governance, ensuring that heightened awareness leads to informed, sustainable implementation (Espino et al., 2025).

Table 2: ***Comparison of Means per District (PRK)***

Environmental Category	PRK 1	PRK 2	PRK 3
Awareness of Environmental Issues	2.98	**3.22**	3.00
Participation in Environmental Activities	**3.14**	3.06	2.92
Commitment to Sustainable Practices	2.92	3.06	**3.08**
Collaboration with Local Authorities	3.06	3.06	**3.20**
Community Perception & Cultural Practices	**3.06**	3.02	3.04
PRK Average Mean	**3.03**	**3.08**	**3.05**

3.3. Thematic Analysis

Thematic analysis of the Focus Group Discussions (FGDs), triangulated with the quantitative results, reveals several underlying gaps between perceived awareness and effective environmental governance at the barangay level. One major theme was the rhetoric-reality gap, where FGD participants described environmentalism as a "requirement" rather than an ingrained lifestyle. While the mean for Awareness of Environmental Issues was notably high (3.07), Commitment to Sustainable Practices lagged behind (3.02). This disconnects mirrors recent findings that high awareness often fails to translate into everyday sustainable actions without deliberate behavior change strategies and supportive institutional structures (Oe et al., 2022). A second critical theme was structural paralysis. Purok leaders in FGDs reported "frontline fatigue," expressing that despite collaborating with city authorities (high Collaboration score in PRK 3: 3.20), low Participation (2.92) persists due to lack of manpower and technical skills for enforcing policies like RA 9003. Studies support this, noting that under-resourced barangays struggle to move from compliance to implementation, especially in solid waste management and climate adaptation (Dinglasan et al., 2024; Bonifacio, 2025). Academic parallelism was also observed, with NSTP-CWTS implementers admitting that their projects are often "one-off" rather than aligned with barangay development plans. Despite high average scores across PRKs (3.03–3.08), this fragmentation results in environmental governance that was underdeveloped and reactive. This was consistent with global and local research emphasizing the need for institutional alignment, shared accountability, and integration of academic and community initiatives for long-term impact. The theme of cultural permeability further emerged: FGDs revealed the community's cultural openness to environmentalism (Community Perception mean = 3.04), yet this readiness was not maximized due to a lack of institutional "triggers." Research confirms that, while cultural values and social capital are vital, they must be

harnessed through formalized, standardized processes—such as those provided by the proposed NSTP framework—to result in sustained environmental stewardship (Ibones et al., 2024; Villanueva et al., 2021). In sum, the triangulation of FGD subthemes and quantitative data exposes a critical implementation deficit. Although mean scores suggest a "High" level of environmental governance (overall mean = 3.06), qualitative findings clarify this as a "Passive High," reflecting compliance more than effectiveness. Barangay officials admitted that their high collaboration scores are more administrative than transformative. Purok leaders highlighted the fragility of these scores, noting that top-down collaboration doesn't guarantee household participation. NSTP implementers recognized that the absence of a formalized coordination framework results in episodic, rather than sustained, engagement. Implications: Bridging these gaps requires institutionalizing NSTP–CWTS through joint planning, integrated monitoring, and shared accountability between HEIs and barangays. Embedding youth and academic involvement within barangay systems can move communities from symbolic stewardship to operational synergy, ensuring that high awareness, cultural readiness, and collaborative potential are translated into measurable, sustainable environmental outcomes (UNESCO, 202).

Table 3. ***Stakeholder Perspectives on Environmental Governance***

Major Theme	FGD Subthemes (Qualitative Approach)	Quantitative Data Contrast (Tally Results)	Stakeholder Perspective & Governance Gap
The Rhetoric-Reality Gap	**Subtheme** "Symbolic Stewardship." FGD participants noted that environmentalism was often seen as a "requirement" rather than a lifestyle.	**Contrast** High Awareness mean of 3.07 vs. the lowest score in Commitment to Sustainable Practices (3.02).	**Insight** This validates the policy paper's claim of "recognized concern but limited action." Awareness was high, but the daily "commitment" was the weakest link.
Structural Paralysis	**Subtheme** "Frontline Fatigue." Purok leaders expressed during FGDs that they lack the staff and technical "know-how" to enforce RA 9003.	**Contrast** PRK 3 shows high Collaboration (3.20) but the lowest Participation (2.92).	**Insight** This contrast shows that while leaders are collaborating with the city, the "frontline" implementation was paralyzed by a lack of manpower and localized strategy.
Academic Parallelism	**Subtheme** "Fragmented Presence." HEI implementers admitted that CWTS projects are often "one-off" and disconnected from the Barangay Development Plan.	**Contrast** Average PRK means are high (3.03-3.08), yet the paper notes governance remains "underdeveloped."	**Insight** The high scores reflect the *potential* for engagement, but the FGDs reveal these efforts operate in "parallel" rather than in "synergy" with the LGU.
Cultural Permeability	**Subtheme** "Cultural Readiness." FGDs highlighted that the community wasculturally open to environmentalism but needs "institutional triggers."	**Contrast** Community Perception & Cultural Practices remains steady at 3.04 across all districts.	**Insight** There was a cultural foundation for stewardship, but it was not being harnessed by a "standardized implementation process" in the current NSTP framework.

4. Conclusion

This study has highlighted a persistent gap between the robust legal frameworks supporting environmental governance in the Philippines—such as the Local Government Code (RA 7160), Ecological Solid Waste Management Act (RA 9003), and NSTP Act (RA 9163)—and the realities of implementation and impact at the barangay level (Bonifacio, 2025; Ibones et al., 2024; Malajos, 2025). While quantitative results show a high baseline of community awareness, collaboration, and readiness, qualitative findings reveal that these strengths often remain untapped due to fragmented policy execution, lack of technical expertise, and insufficient institutional coordination (Dinglasan et al., 2024). Academic initiatives, including the NSTP—especially its Civic Welfare Training Service (CWTS) component—are often implemented as isolated, short-term activities rather than as integral, strategic elements of barangay development plans (Villanueva et al., 2021). The evidence suggests that "symbolic stewardship"—where environmentalism was regarded as a requirement rather than a

lived value—remains a challenge, limiting the impact of otherwise promising youth and civic programs (Oe et al., 2022). "Frontline fatigue" among local leaders, due to limited manpower and technical resources, further hampers the effective enforcement of environmental mandates (Bonifacio, 2025). The result was a "passive high" in survey scores: communities that are aware and willing, but not consistently empowered or engaged in practice (Ibones et al., 2024). This study's thematic analysis confirms that without bridging the gap between academic service learning and barangay-level implementation, the transformative potential of the NSTP will remain limited (UNESCO, 2021). To address these challenges, the study proposes that institutionalizing joint planning, integrated monitoring, and shared accountability between higher education institutions, local government units, and civil society organizations was essential. Embedding NSTP-CWTS activities within local development frameworks and ensuring that youth participation was not only symbolic but also strategic and sustained can create a platform for real, community-rooted change (Alamban et al., 2024). When local authorities, youth, and academic institutions co-design and co-implement programs, there was greater potential to transform awareness into action, foster long-term behavior change, and build resilient, empowered communities (Zhang et al., 2020). Finally, the broader implication for policy and practice was clear: the path to sustainable, community-based environmental governance lies not in the proliferation of new laws, but in the effective operationalization and contextual adaptation of existing frameworks. By leveraging the strengths of decentralization, fostering participatory governance, and harnessing the potential of the National Service Training Program in alignment with local realities, the Philippines can make significant progress toward the Sustainable Development Goals—especially those related to quality education, climate action, and strong institutions (UNESCO, 2021; Oe et al., 2022). In summary, empowering barangays, institutionalizing youth engagement, and building genuine multi-stakeholder partnerships are pivotal steps toward realizing a future of resilient, empowered, and environmentally conscious communities.

Compliance with ethical standards

Statement of ethical approval

The study ensured ethical compliance by obtaining informed consent from all participants and maintaining their confidentiality. Respondents were informed about the purpose of the study, the procedures involved, and their right to withdraw at any time. Data collected were used solely for research purposes, and sensitive information was anonymized to protect privacy. Ethical considerations also extended to the proper handling of installed devices in homes and business establishments, ensuring no disruption to daily activities or compromise of personal property.

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