

Assessing the Role of Community-Driven Environmental Education in Fostering Civic Engagement and Sustainability in Barangay Luksuhin Ibaba, Alfonso Cavite

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ABSTRACT

This research examines the influence of community-based environmental education (CBEE) on civic engagement and sustainable actions in Barangay Luksuhin Ibaba, Alfonso, Cavite, with a focus on how it enhances environmental awareness and drives behavior change. CBEE is crucial in tackling local environmental issues, such as improper waste disposal, by promoting community participation, fostering partnerships with local institutions, and empowering residents. The study employed a descriptive-correlational approach to explore how various CBEE strategies contribute to sustainable behaviors and active community involvement. The results revealed significant positive relationships between key CBEE components—participatory learning, accessibility, collaboration, and empowerment—and increased civic participation, sustainable practices, and social mobilization. Regression analysis further confirmed that these factors were strong predictors of successful environmental education outcomes. The study recommends enhancing CBEE programs by emphasizing inclusive and participatory learning methods, strengthening local partnerships, encouraging ownership of sustainability projects, and ensuring equitable access to all community members. Regular assessment and adaptation of these programs are essential to maintaining long-term environmental responsibility and promoting collective action. This research underscores the essential role of community involvement in driving effective environmental change and advancing sustainability initiatives.

Keywords: Civic Engagement, Community-Based Environmental Education, Participatory Learning, Social Mobilization, Sustainable Action, Local Collaboration

INTRODUCTION

Community-based environmental education (CBEE) has long been recognized as a pivotal tool for promoting sustainable practices and fostering civic engagement within local communities. By integrating local knowledge, participatory learning, and institutional collaboration, CBEE empowers individuals to take collective responsibility for environmental conservation. At the heart of this approach is the belief that fostering awareness and participation leads to long-term environmental stewardship. As communities face increasing environmental challenges, including waste disposal and natural resource depletion, CBEE has proven instrumental in not only enhancing knowledge but also in inspiring action that contributes to broader environmental goals. In Barangay Luksuhin Ibaba, Alfonso, Cavite, the issues of improper waste disposal and ineffective waste management have persisted, creating an urgent need for strategies that encourage both behavioral change and active community participation in environmental protection. Recent studies, such as those by Garcia & Cruz (2023), emphasize how CBEE can help tackle these issues by embedding sustainable practices within local culture and involving community members in environmental decision-making processes.

Globally, CBEE has been recognized as a transformative tool for promoting sustainability. A variety of international studies demonstrate the effectiveness of CBEE in increasing public participation in environmental conservation. For instance, Nguyen & Patel (2023) found that structured CBEE programs have successfully enhanced citizen engagement in eco-friendly practices and policy advocacy in different regions. In many developing countries, where environmental degradation is a pressing issue, CBEE has shown tangible results in improving waste management practices and reducing ecological damage. Martinez & Torres (2021) reported that in rural areas of Latin America, CBEE initiatives helped to build local capacity for environmental management by equipping individuals with the necessary skills and knowledge. While these global studies highlight the potential of CBEE, they also point to challenges related to access and the socio-economic disparities that exist within different communities. Marginalized groups often face barriers to full participation in CBEE programs, limiting the overall effectiveness of such initiatives.

In Asia, the application of CBEE has been equally significant. Countries like India, Thailand, and Vietnam have implemented successful CBEE programs aimed at addressing environmental challenges, particularly waste management and resource conservation. A study by Tan & Liu (2022) in Southeast Asia noted that CBEE initiatives helped local communities take ownership of waste management practices and encouraged responsible consumer behavior. However, the results were often mixed, as issues such as insufficient resources, lack of governmental support, and cultural barriers to behavior change hindered some of the initiatives' effectiveness. The importance of tailoring CBEE programs to the specific needs and cultural contexts of each community became evident in these cases, as generalized approaches often fell short of achieving long-term sustainability goals.

In the Philippines, environmental issues such as waste disposal, deforestation, and water pollution have prompted increased interest in CBEE as a solution. Local studies, like those by Lopez & Ramos (2022), have shown that participatory learning and collaboration between local governments and community organizations can result in more sustainable waste management practices. However, while there has been a growing body of literature on the role of CBEE in environmental education, research has often focused on its general effectiveness without delving deeply into how specific components—such as community engagement, empowerment, and local institutional collaboration—contribute to measurable outcomes. In Barangay Luksuhin Ibaba, environmental challenges like improper waste segregation and disposal systems continue to hinder the full potential of CBEE programs, despite widespread recognition of their importance.

Despite the growing recognition of CBEE's potential to foster civic engagement and sustainable action, there remain significant gaps in understanding its long-term impacts, particularly in terms of behavior change and the scalability of interventions. While many studies have qualitatively assessed the role of CBEE in promoting environmental awareness, few have quantitatively measured how CBEE interventions directly influence individual behavior and community-wide sustainability practices (Fernandez & Lee, 2022). Furthermore, the effectiveness of participatory learning approaches in communities with varying socio-economic contexts has not been adequately explored. These gaps highlight the need for localized studies to assess the specific impacts of CBEE in different communities, particularly in terms of solid waste management, where inefficiencies in waste segregation and disposal continue to hinder environmental goals.

The objectives of this study were to examine the impact of CBEE on civic engagement and sustainable action in Barangay Luksuhin Ibaba, Alfonso, Cavite. The research aimed to assess the effectiveness of participatory learning strategies, community collaboration, and empowerment in promoting environmental responsibility. It also sought to identify the factors that contribute to the success or failure of CBEE initiatives in addressing local environmental issues, particularly waste disposal. Through this study, it was hoped that insights could be gained to enhance CBEE programs and promote

more effective, sustainable environmental practices in similar local contexts.

LITERATURE REVIEW

Community-based environmental education (CBEE) has emerged as a transformative tool in promoting active community participation and environmental conservation. By equipping individuals with the necessary knowledge and skills, CBEE programs foster a deeper sense of responsibility towards the environment, resulting in increased civic engagement in sustainability efforts. Research underscores the importance of local involvement in environmental education programs, suggesting that when communities are engaged in environmental initiatives, they develop a greater commitment to protecting their natural surroundings (Doherty & Webler, 2022). This sense of shared responsibility often translates into a higher level of civic participation in environmental conservation activities. Participatory learning approaches, such as hands-on learning and community-based workshops, have been linked to more enduring behavior changes, leading to greater involvement in advocacy, policy discussions, and grassroots movements (Lee et al., 2023). These interactive learning methods provide individuals with both the practical skills and the motivation to become active participants in addressing environmental issues. Furthermore, the accessibility and inclusiveness of CBEE programs play a critical role in fostering broader civic participation. Research highlights that inclusive educational initiatives, which actively involve marginalized groups, offer equitable opportunities for community members to engage in sustainability efforts, thus enhancing collective environmental stewardship (Brown & Cushing, 2023).

Sustainable action is a key outcome of CBEE, as environmental education has been shown to lead to long-term behavioral changes in individuals. Studies demonstrate that CBEE programs that integrate experiential, hands-on learning significantly contribute to sustainable practices such as waste reduction, reforestation, and responsible consumption (Garcia & Lopez, 2022). These programs provide practical solutions to pressing ecological challenges and empower participants to implement environmentally responsible behaviors. Additionally, when sustainability practices are reinforced by supportive community networks and peer influence, individuals are more likely to adopt and sustain environmentally friendly behaviors (Rodriguez & Kim, 2021). Government policies that support and align community-based education initiatives with national environmental goals also play a crucial role in reinforcing these efforts, providing a framework for sustainability at the local level (Huang & Patel, 2023). The integration of experiential learning, in particular, strengthens the connection between environmental education and sustainable action by offering community members hands-on opportunities to address real-world environmental issues (Santoro et al., 2023). These findings suggest that CBEE not only raises awareness but also leads to measurable changes in individual and collective behavior, directly contributing to sustainable practices in local communities.

Social mobilization and awareness are foundational elements of effective environmental education. Research indicates that raising public awareness about environmental issues through educational programs can catalyze increased community activism and engagement in environmental protection efforts (Martinez & Cooper, 2024). Educational initiatives that focus on informing the public about key environmental challenges often spark broader participation in grassroots movements, environmental rallies, and policy advocacy. Programs that incorporate interactive learning, media campaigns, and community outreach have proven especially effective in mobilizing communities, empowering them to take collective action on sustainability (Hernandez & Lee, 2022). Additionally, partnerships between local institutions—such as schools, community groups, and government agencies—have been found to enhance social mobilization by fostering collaborative efforts that promote environmental protection and sustainability (Gonzalez & Torres, 2023). These partnerships create synergies that increase the reach and impact of environmental education programs.

Furthermore, the use of digital platforms for advocacy and public engagement has been shown to significantly enhance participation, especially among younger, tech-savvy generations (Lopez & Chang, 2021). These platforms provide a powerful tool for spreading awareness and organizing community-driven initiatives, ensuring that environmental education reaches a wider audience.

Lastly, participatory learning approaches, which are central to CBEE, have been found to strengthen the relationship between environmental education and civic engagement. By providing individuals with the tools and knowledge to make informed decisions, these programs empower people to actively participate in environmental governance and decision-making processes (Rodriguez & Nguyen, 2021). Participatory methods such as community discussions, collaborative projects, and experiential workshops ensure that participants not only gain knowledge but also develop the confidence to engage in environmental policy and advocacy efforts. These findings highlight the value of CBEE in fostering sustainable behavior change through education, collaboration, and community engagement, ultimately contributing to long-term environmental preservation and the development of resilient, environmentally-conscious communities.

Overall, the growing body of literature confirms that CBEE is a powerful approach for promoting sustainable behavior, strengthening community ties, and driving civic engagement in environmental initiatives. However, while these global and regional studies emphasize the positive outcomes of CBEE, there remains a gap in understanding the specific mechanisms through which CBEE influences behavior change in various socio-economic and cultural contexts. This gap underscores the need for more localized research to explore how CBEE can be optimized to address the unique environmental challenges faced by specific communities, particularly in terms of waste management and resource conservation.

MATERIALS AND METHODS

This study adopted a descriptive-correlational research design to investigate the impact of community-based environmental education (CBEE) on civic engagement and sustainable action in Barangay Luksuhin Ibaba, Alfonso, Cavite. The descriptive aspect of the study aimed to offer a detailed examination of how various CBEE components—such as participatory learning, accessibility, collaboration with local institutions, and empowerment—affect civic engagement and sustainable practices. Specifically, it explored the relationships between these CBEE elements and outcomes like environmental advocacy, community-driven sustainability, and local engagement in eco-friendly actions. To analyze the strength of these relationships, regression analysis was conducted to determine the predictive influence of CBEE strategies on civic engagement and sustainable behaviors. The study sought to identify key factors within CBEE, including participatory learning and institutional collaboration, that significantly influenced community involvement in environmental initiatives. This approach provided empirical insights into how CBEE contributes to the development of long-term environmental stewardship and informed sustainable decision-making in the community (Jones & Peterson, 2022).

Barangay Luksuhin Ibaba was selected as the research site due to its notable participation in CBEE programs and its proactive engagement in local sustainability efforts. As an agricultural and semi-urban community, Luksuhin Ibaba faces various environmental challenges that make CBEE particularly relevant. Local initiatives such as educational workshops, training sessions, and capacity-building activities have played a crucial role in equipping residents, particularly marginalized groups, with the knowledge and skills needed to address these challenges. Collaboration between local government units, schools, non-governmental organizations (NGOs), and other stakeholders has been central in promoting sustainability across various sectors. These efforts have focused on key

environmental concerns, including biodiversity conservation, sustainable agricultural practices, and waste reduction. The integration of CBEE within these initiatives has been essential for ensuring broad community engagement, fostering a collective sense of responsibility, and promoting long-term commitment to environmental sustainability (Gonzalez & Santos, 2023).

A stratified random sampling technique was employed to ensure that the study sample was representative of the diverse stakeholders involved in CBEE and sustainability efforts in Barangay Luksuhin Ibaba. The final sample comprised 356 participants, including community residents, local government officials, educators, youth groups, environmental advocates, and representatives from local institutions. The stratified sampling approach ensured a balanced representation of these different sectors, allowing for a comprehensive analysis of how various groups perceive and engage with CBEE. Data collection was carried out using a combination of structured questionnaires, semi-structured interviews, and document analysis. The questionnaires were designed to assess participants' perceptions of CBEE's effectiveness in promoting civic engagement, sustainable behaviors, and social mobilization. In addition to quantitative data, qualitative insights were gathered through interviews to explore the challenges, successes, and lessons learned from local environmental initiatives. By integrating both quantitative and qualitative approaches, the study aimed to provide a well-rounded understanding of how CBEE influences civic engagement and environmental sustainability in Barangay Luksuhin Ibaba (Smith & Garcia, 2022).

This mixed-methods approach allowed for a holistic examination of CBEE's impact, capturing both the measurable effects of CBEE on sustainability and the nuanced experiences and perspectives of community members and stakeholders involved in the programs. The findings from this study are expected to contribute valuable insights into how CBEE programs can be optimized to enhance civic participation and drive sustainable action, particularly in communities facing similar environmental challenges.

RESULTS AND DISCUSSION

1. How do local stakeholders assess the effectiveness of community-based environmental education in terms of:

Table 1
Summary of Local Stakeholders' Assessment of Community-based Environmental Education Programs

Category	Overall Mean	Interpretation
Participatory Learning Approaches	3.60	Very High Implementation
Accessibility and Inclusiveness	3.46	Very High Implementation
Collaboration with Local Institutions	3.45	Very High Implementation
Empowerment and Ownership	3.49	Very High Implementation

The results from the local stakeholders' assessment of the community-based environmental education program reveal a strong perception of effectiveness across all categories. The overall mean scores for participatory learning approaches, accessibility and inclusiveness, collaboration with local institutions, and empowerment and ownership were all within the "Very High Implementation" range, indicating that stakeholders felt the program was highly successful in engaging the community. Specifically, participatory learning approaches received the highest score (3.60), with hands-on learning activities being particularly valued (mean = 3.70). This aligns with existing research that highlights the effectiveness of active learning in environmental education for increasing participant engagement and

knowledge retention (Garcia et al., 2021). In terms of accessibility, the program was seen as highly inclusive (mean = 3.46), ensuring that individuals from diverse backgrounds and abilities could participate. However, the slightly lower mean for the timing of educational sessions (mean = 3.35) suggests room for improvement in scheduling to accommodate the varying availability of community members, a point emphasized in studies by Lopez et al. (2023).

The collaboration with local institutions was also highly rated (mean = 3.45), with government agencies, schools, and NGOs being seen as essential partners in enhancing the program's reach and effectiveness. This supports the findings of Gonzales et al. (2021), which stress the importance of local partnerships in sustaining environmental education efforts. Finally, the program's ability to empower participants and foster ownership was reflected in a mean score of 3.49, with stakeholders noting that the program successfully encouraged eco-friendly behaviors and local leadership. However, the slightly lower score for fostering responsibility for local environmental issues (mean = 3.45) suggests that there may be an opportunity to further strengthen personal accountability and leadership, which are key factors for long-term sustainability (Brown & Johnson, 2020). Overall, the results indicate that while the program is highly effective, there are still areas for improvement, particularly in terms of optimizing session timing, increasing business involvement, and enhancing personal accountability for environmental issues. These findings underscore the importance of participatory, inclusive, and empowering approaches in environmental education, offering valuable insights for program enhancement.

2. How do local stakeholders evaluate the outcomes of community-based environmental education on civic engagement and sustainable action in terms of:

Table 2 presents the local stakeholders' evaluations of the community-based environmental education program, which reflect a strong perception of the program's effectiveness in fostering civil engagement, sustainable action, and social mobilization and awareness. The overall mean scores across the three areas—Civil Engagement (M = 3.50), Sustainable Action (M = 3.53), and Social Mobilization and Awareness (M = 3.54)—are all within the "Strongly Agree" range (3.26-4.00), indicating that participants view the program as highly successful in achieving its intended outcomes.

Civil Engagement (M = 3.50, SD = 0.74)

The evaluation of civil engagement suggests that stakeholders strongly agree the program has been effective in fostering active participation within the community. The mean score of 3.50 indicates that respondents are highly engaged in activities such as discussions about social and environmental issues, volunteering, and encouraging others to participate in civic initiatives. The relatively low standard deviation (0.74) suggests a consensus among stakeholders, implying that most participants perceive the program as equally effective in promoting civil engagement. This aligns with findings by Smith and Williams (2022), which highlight the importance of community education in generating sustained civic participation.

However, while the score reflects strong involvement, the slightly lower participation in policy-related discussions (with a mean of 3.47) suggests there is an opportunity for further engagement at the policy level. Encouraging stakeholders to more actively participate in policy forums could help bridge the gap between education and tangible policy action (Miller & Brown, 2020).

Sustainable Action (M = 3.53, SD = 0.69)

The sustainable action area shows that respondents also strongly agree that the program has been effective in promoting environmentally responsible behaviors. With an overall mean of 3.53, local

stakeholders view the program as highly successful in encouraging practices such as recycling, reducing waste, and conserving energy. Notably, the mean score for reducing waste and recycling (3.55) is the highest among the items in this category, indicating that this is one of the most prevalent sustainable actions participants are taking.

The relatively low standard deviation (0.69) indicates broad agreement among stakeholders that the program has effectively instilled sustainable behaviors, suggesting the education provided has been clear and impactful. However, the slightly lower score for promoting sustainability among family and friends (3.49) indicates variability in the level of influence participants feel they have in spreading these practices beyond their immediate actions. Harris and Peterson (2021) suggest that expanding peer-to-peer education efforts could further amplify the adoption of sustainability practices within communities.

Social Mobilization and Awareness ($M = 3.54$, $SD = 0.72$)

The evaluation of social mobilization and awareness shows the highest mean score among the three areas, with an overall mean of 3.54. This suggests that the program has been particularly effective in raising awareness and mobilizing participants around environmental and social issues. Respondents strongly agreed that they actively participate in awareness-raising campaigns (mean = 3.58), which is an essential component of social mobilization and a key factor in driving community action (Evans & Hughes, 2021).

The relatively low standard deviation (0.72) indicates strong consistency in stakeholders' views about the program's effectiveness in fostering awareness and mobilization. However, the slightly lower score for attending events or workshops (mean = 3.51) suggests that some community members might not be as actively engaged in all educational events or workshops, even though they are involved in campaigns. Increasing the frequency and diversity of these events could potentially enhance participation and strengthen the program's reach (Collins & Foster, 2022).

Overall, the local stakeholders' evaluations suggest that the community-based environmental education program is highly effective in promoting civil engagement, sustainable actions, and social mobilization and awareness. The consistently high overall mean scores across the three areas demonstrate that the program has fostered a significant level of active participation in environmental initiatives. However, areas for improvement include enhancing participation in policy-related discussions and peer-to-peer sustainability promotion, as well as increasing attendance at educational events and workshops to further strengthen social mobilization efforts. These findings underscore the importance of continued support and adaptation to sustain the positive outcomes observed.

Table 2
Overall Mean Scores of Local Stakeholders' Evaluation of the Community-based Environmental Education Program Outcomes

Area	Overall Mean (M)	Standard Deviation (SD)
Civil Engagement	3.50	0.74
Sustainable Action	3.53	0.69
Social Mobilization and Awareness	3.54	0.72

3. How does community-based environmental education influence civic engagement and sustainable action in Barangay Luksuhin Ibaba?

Table 3 presents the results of the regression analysis used to test the significant influence of community-based environmental education on civic engagement and sustainable action in Barangay Luksuhin Ibaba. The regression analysis reveals that all three components—civic engagement,

sustainable action, and social mobilization and awareness—significantly influence the dependent variables.

The unstandardized coefficients for civil engagement ($B = 0.306$, $p = 0.000$), sustainable action ($B = 0.116$, $p = 0.019$), and social mobilization and awareness ($B = 0.355$, $p = 0.000$) indicate that these factors contribute meaningfully to the overall model. This means that as each of these components increases, there is a corresponding increase in the outcomes related to civic engagement and sustainable actions.

- **Civil Engagement:** The unstandardized coefficient ($B = 0.306$) with a p-value of **0.000** indicates that increased civil engagement is significantly linked to higher levels of community participation in environmental activities.
- **Sustainable Action:** With an unstandardized coefficient ($B = 0.116$) and a p-value of **0.019**, sustainable action shows a statistically significant, albeit smaller, influence on the outcomes.
- **Social Mobilization and Awareness:** The unstandardized coefficient ($B = 0.355$) with a p-value of **0.000** reveals that social mobilization and awareness have the most significant influence on the outcomes, suggesting that increasing awareness and mobilizing the community lead to more sustainable behaviors.

The overall model has an adjusted R-squared value of 0.529, which means that 52.9% of the variance in civic engagement and sustainable action outcomes can be explained by the variables in the model. These findings underscore the importance of community-based environmental education in driving changes in behavior related to sustainability.

According to Zhang and Lee (2022), environmental education programs significantly enhance civic participation and sustainable behaviors by fostering active community engagement and awareness. Similarly, Patel and Tan (2021) found that programs focused on community involvement, along with tailored educational strategies, lead to improved environmental outcomes and long-term civic engagement.

Table 3
Test of the Significant Influence of Community-based Environmental Education on Civic Engagement and Sustainable Action in Barangay Luksuhin Ibaba

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
(Constant)	0.885		5.997	0.000
Civil Engagement	0.306	0.334	6.448	0.000
Sustainable Action	0.116	0.116	2.355	0.019
Social Mobilization and Awareness	0.355	0.372	6.681	0.000
Adjusted R ²		0.529		
ANOVA for Regression		F = 131.068, p = 0.000		

4. Based on the findings, what policies and strategies can be recommended to strengthen community-based environmental education and enhance its impact on civic engagement and sustainable action?

Based on the findings, several policies and strategies can be recommended to strengthen community-based environmental education (CBEE) and enhance its impact on civic engagement and sustainable action. The key to achieving long-term, meaningful environmental behavior change lies in fostering inclusive, participatory, and collaborative approaches. One primary strategy is to prioritize hands-on, interactive, and participatory learning experiences that actively involve community members. These

approaches have been shown to encourage greater civic engagement and translate environmental knowledge into sustainable action. To implement this, programs should engage all community segments, including marginalized groups like youth, the elderly, and those with lower educational levels. Furthermore, expanding community-led environmental education initiatives, where local leaders design and implement programs addressing local concerns, can be effective. Incorporating real-world case studies relevant to the community's context would also ensure that environmental concepts are applied to participants' daily lives.

Collaboration with local institutions is another essential strategy. Schools, government agencies, non-governmental organizations (NGOs), and businesses all play a crucial role in sustaining environmental education efforts. Integrating environmental education into school curricula from a young age ensures that future generations grow up with a strong foundation in sustainability. Local businesses should be encouraged to sponsor and support these programs, providing necessary resources and financial backing. Expanding collaborations with local government units (LGUs) can secure additional funding and logistical support, making these programs more sustainable and far-reaching.

Empowerment and ownership of sustainability initiatives are also critical. When community members take the lead in sustainability efforts, it fosters greater participation and ensures the longevity of these initiatives. Encouraging self-directed projects where community members identify and solve local environmental issues helps instill a sense of responsibility and ownership. Additionally, providing training and resources for community leaders to manage these projects enhances the local capacity to sustain environmental initiatives. Leadership programs can empower individuals to take on active roles, contributing to more effective and widespread implementation of sustainability practices.

To ensure inclusivity, policies should focus on increasing access to environmental education for underrepresented groups, particularly younger individuals and those with lower educational attainment. Offering youth-targeted initiatives, such as school outreach programs, environmental clubs, and youth-led sustainability projects, would encourage young people to become engaged. Providing educational materials in multiple formats, such as digital, visual, and accessible language, ensures that individuals with different learning preferences and literacy levels can also participate. Outreach programs should target these underrepresented groups to guarantee that all community members are included in sustainability efforts.

Addressing barriers to participation, such as the timing of educational sessions, is another key area for improvement. Offering flexible scheduling for environmental education sessions would ensure that community members can attend regardless of their work or life schedules. Using various outreach methods, such as community radio, social media, and local events, would further promote these programs to a broader audience. Holding workshops and forums at different times, including weekends and evenings, would ensure greater accessibility, particularly for those who cannot attend sessions during traditional work hours.

Finally, to ensure continuous improvement, there should be a robust system for monitoring and evaluating the impact of these programs. Regular assessments of the program's reach, effectiveness, and engagement levels will provide insights into what is working and where adjustments are needed. Gathering feedback from participants on the relevance and accessibility of educational content will help adapt programs to meet the evolving needs of the community. Additionally, tracking long-term outcomes related to civic engagement and sustainable behavior will help measure the sustained impact of the program, ensuring that environmental education continues to promote meaningful and lasting changes in community behavior.

By implementing these strategies, community-based environmental education can foster deeper engagement, enhance sustainable actions, and ensure that all community members have the

opportunity to contribute to environmental preservation. These policies and strategies aim to strengthen existing frameworks, ensuring that these programs have a lasting impact on both individuals and the community as a whole.

CONCLUSION

The findings of this study underscore the pivotal role of community-based environmental education in fostering both civic engagement and sustainable practices. Educational programs that are inclusive, participatory, and collaborative significantly impact individuals' environmental behaviors and their involvement in civic initiatives. These programs have successfully motivated community members to adopt eco-friendly practices and take active ownership of local environmental projects. Strengthening and expanding these programs to ensure they are accessible to all members of the community will enhance their ability to drive meaningful progress toward environmental sustainability. As these programs continue to engage individuals across diverse levels, their influence will grow, leading to broader, more sustained community actions. Inclusivity remains key to achieving long-term environmental goals and ensuring widespread participation in sustainability efforts.

Furthermore, the study highlights the critical importance of ongoing collaboration between local institutions, government agencies, and community organizations to sustain environmental education initiatives. Partnerships with these entities are essential for amplifying the reach and impact of environmental education programs, allowing them to foster long-term sustainability. These collaborations provide vital resources, expertise, and infrastructure, which are crucial for expanding the scope and effectiveness of environmental education efforts. By working together, these stakeholders can create a more integrated approach to environmental education, one that enhances the resilience and impact of the programs. Sharing best practices and resources through these partnerships strengthens the community's collective response to environmental challenges. Ensuring that these partnerships continue to thrive will be fundamental for the long-term sustainability of these programs.

In conclusion, community-based environmental education programs hold significant potential for driving meaningful and lasting change in local communities. The positive outcomes observed in this study validate the effectiveness of inclusive, collaborative, and empowering educational approaches. These programs inspire individuals to take action while fostering a broader sense of collective responsibility for environmental sustainability. For these programs to remain impactful and sustainable, they must be integrated into wider sustainability initiatives and continue to be accessible and relevant to all community members. This will require sustained support from local government, educational institutions, and community-based organizations. Through continued effort and collaboration, these programs will continue to engage communities, contributing to the long-term environmental sustainability of the region.

Recommendations

Based on the summary and conclusion, these are the recommendations:

1. **Local Government Units (LGUs) and Policymakers.** Implement policies that prioritize community-based environmental education, ensuring that all demographic groups, especially underrepresented populations, have access to sustainable education programs and resources.
2. **Community Members and Local Organizations.** Strengthen participation in environmental initiatives by providing more opportunities for community members to take leadership roles, fostering ownership and accountability for local environmental issues.
3. **Educational Institutions and Environmental Educators.** Develop and deliver educational programs that are inclusive, hands-on, and tailored to the varying educational levels of participants,

ensuring broad engagement and impact.

4. **Environmental Advocacy Groups and Non-Governmental Organizations (NGOs).** Enhance collaboration with local institutions, businesses, and governmental agencies to create a more integrated and supportive network for environmental education.
5. **Researchers and Academicians.** Conduct further research on the long-term impacts of community-based environmental education and explore innovative methods to increase participation and effectiveness, particularly for underrepresented groups.

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