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Exploring community perspectives and initiatives for environmental sustainability toward a proposed 5-year corporate social responsibility plan in Mariveles, Bataan

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ABSTRACT

This qualitative study explores community perceptions of environmental conditions and sustainability initiatives in selected barangays of Mariveles, Bataan. Utilizing semi-structured interviews and focus group discussions with 30 residents from Barangays Alas-Asin, Baseco, and Sisiman, the research aims to understand local perspectives on water quality, air quality, and community engagement in environmental efforts. Thematic analysis revealed several key findings: participants expressed significant concerns about access to safe water sources and air quality, linking these issues directly to their health and well-being. A strong sense of personal responsibility for environmental stewardship was evident; however, barriers such as time constraints and limited awareness hindered active participation in local initiatives. The study also highlighted the importance of education and communication from local authorities to foster greater community involvement. Participants suggested regular community clean-up drives, enhanced educational programs on sustainability, and improved collaboration with local organizations as effective strategies for addressing environmental challenges. Based on these insights, a five-year Corporate Social Responsibility (CSR) plan titled “Kilos-Lakas-Kalikasan” is proposed to establish a structured partnership between GNPow and the community, focusing on collaborative projects aimed at enhancing environmental protection. This research contributes to understanding the role of community engagement in sustainability efforts and offers actionable recommendations for improving environmental conditions in Mariveles.

INTRODUCTION

Environmental degradation has emerged as one of the most pressing challenges facing humanity, with far-reaching consequences for both human health and ecological sustainability. The rapid pace of urbanization, industrial growth, and unsustainable consumption patterns has led to significant environmental issues, including air and water pollution, habitat destruction, biodiversity loss, and climate change (Folke et al., 2019; IPBES, 2019; Rockström et al., 2021). These environmental pressures have intensified in recent years, particularly in developing countries where economic development often outpaces environmental regulation and enforcement. Such challenges are not confined to specific regions;

rather, they present global implications that necessitate coordinated and multi-level responses from governments, private institutions, and local communities (UNEP, 2021).

Recent studies emphasize that environmental sustainability cannot be achieved through top-down policies alone, as community participation plays a critical role in the success and longevity of environmental initiatives (Berkes, 2020; Reed et al., 2020). Local communities are often the first to experience the adverse effects of environmental degradation, making their perspectives, knowledge, and participation indispensable in designing responsive and context-sensitive sustainability programs. The interconnectedness of environmental issues underscores a shared responsibility among

communities, local governments, and private stakeholders in addressing these challenges effectively.

In the Philippine context, environmental degradation is particularly pronounced due to rapid urban expansion, industrialization, population growth, and inadequate waste management practices (Chavez et al., 2020; Esteban et al., 2021). Coastal and industrial municipalities such as Mariveles, Bataan, face compounded environmental risks, including water contamination, air pollution, and solid waste mismanagement, which directly affect public health and livelihood sustainability. These environmental challenges disproportionately affect marginalized and low-income communities, thereby amplifying existing social and economic vulnerabilities (World Bank, 2022). As such, there is an increasing need to strengthen local environmental governance mechanisms that are responsive to community realities.

Barangays, as the smallest political and administrative units in the Philippines, play a crucial role in grassroots environmental governance. They serve as frontline implementers of national and local environmental policies and are strategically positioned to mobilize community participation (Brillantes & Fernandez, 2019). Despite this critical role, barangays often face limitations in resources, technical capacity, and institutional support, which constrain their ability to implement sustainable environmental initiatives effectively (Capuno et al., 2021). Understanding how communities perceive environmental problems and initiatives at the barangay level is therefore essential in strengthening local environmental governance.

However, existing studies often overlook the unique challenges and lived experiences of barangays in addressing environmental issues (Magsino, 2020; Peralta & Bartolo, 2018). Much of the environmental research in the Philippines remains concentrated at the national or regional level, with limited attention to community-based perspectives and localized sustainability practices. This gap in the literature is concerning, as scholars argue that effective environmental interventions must be grounded in local knowledge, values, and socio-cultural contexts (Agrawal, 2019; Ostrom, 2020). Without a comprehensive understanding of community perceptions and experiences,

policymakers and development planners risk implementing strategies that fail to resonate with local priorities.

The need for qualitative research in environmental sustainability has been increasingly emphasized in recent literature. Qualitative approaches allow researchers to capture the depth, complexity, and contextual nuances of community experiences that are often overlooked by quantitative methods (Creswell & Poth, 2019; Guest et al., 2022). Such approaches are particularly valuable in exploring how communities interpret environmental risks, engage with sustainability initiatives, and negotiate their roles in collective action. In this regard, qualitative inquiry provides a critical lens for understanding not only what environmental problems exist, but how they are socially constructed and addressed at the community level.

A previous quantitative study conducted in selected barangays of Mariveles, Bataan, provided valuable baseline data on environmental indicators such as drinking water quality, ambient air conditions, and river health. While these findings offered important empirical insights, they did not fully capture the social, cultural, and behavioral factors influencing community engagement in environmental sustainability. Scholars argue that combining environmental data with qualitative insights enhances the relevance and effectiveness of sustainability planning (Scoones, 2020; Bennett et al., 2021). Thus, there is a need to complement quantitative assessments with qualitative explorations of community perspectives.

This study addresses this gap by adopting a developmental qualitative research design centered on a proposed five-year Corporate Social Responsibility (CSR) plan known as Kilos-Lakas-Kalikasan. Corporate Social Responsibility has increasingly been recognized as a strategic mechanism through which private institutions can contribute to sustainable development, particularly when aligned with community needs and environmental priorities (Carroll & Brown, 2018; Jamali et al., 2020). Recent studies highlight that CSR initiatives are most effective when they are participatory, context-driven, and co-created with local stakeholders (Crane et al., 2021; Porter et al., 2023).

By engaging community members from Barangays Alas-Asin, Baseco, and Sisiman, this research sought to explore their experiences, perceptions, and expectations regarding environmental sustainability initiatives. Community engagement in CSR-driven environmental programs has been shown to enhance trust, accountability, and long-term program sustainability (Matten & Moon, 2020; Ranjan & Yadav, 2021). Understanding community perspectives is therefore essential in designing CSR interventions that are not only environmentally sound but also socially acceptable and locally relevant.

Qualitative research offers a unique opportunity to capture the nuances of community perspectives that quantitative methods may overlook. Through in-depth interviews and focus group discussions, this study gathered rich narratives from residents regarding their lived experiences with environmental challenges and their engagement with existing initiatives. Such narratives provide valuable insights into perceived barriers to participation, levels of awareness, and community motivations, all of which are critical in strengthening environmental programs (Braun & Clarke, 2021; Saldaña, 2021). These insights also contribute to more inclusive and adaptive sustainability planning processes.

Moreover, this research examined how cultural beliefs, social norms, and local practices influenced community engagement in environmental sustainability initiatives. Culture plays a significant role in shaping environmental behavior, values, and collective action, particularly in community-based settings (Pretty et al., 2019; Kenter et al., 2020). Recognizing the cultural context within which these communities operate enables the development of CSR strategies that are culturally sensitive, participatory, and empowering. Engaging community members in this manner fosters a sense of ownership and shared responsibility over local environmental initiatives.

Aligned with the Sustainable Development Goals (SDGs), particularly Goal 11: Sustainable Cities and Communities, this research emphasizes the importance of inclusive community engagement in achieving environmental sustainability. Goal 11 advocates for participatory, people-centered approaches in addressing urban and environmental challenges (United Nations, 2023). By examining

local perspectives on environmental initiatives within Barangays Alas-Asin, Baseco, and Sisiman, this study contributes context-specific insights that support the localization of the SDGs and the development of community-responsive sustainability interventions.

Ultimately, this qualitative study sought to bridge the gap in understanding community perspectives on environmental sustainability at the barangay level. By focusing on the Kilos-Lakas-Kalikasan CSR plan in Mariveles, Bataan, this research provides critical insights into how local communities perceive their roles in addressing environmental challenges and how they can be more effectively supported through targeted, participatory, and culturally grounded initiatives.

The general problem of this study is: What five-year Corporate Social Responsibility (CSR) plan may be proposed based on the residents' perceptions of the current environmental status in select barangays in Mariveles, Bataan? Specifically, the researchers sought answers to the following questions: (1) What are the community members' perceptions of current environmental conditions in their barangays? (2) How do residents view their role in contributing to local environmental sustainability efforts? (3) What suggestions do residents have for improving the environmental initiatives in their respective barangays? (4) What five-year Corporate Social Responsibility Plan may be proposed based on the themes that emerged?

Upon the completion of this research, the proponents aim to: (1) Identify and analyze community members' perceptions of current environmental conditions in their barangays; (2) Explore how residents view their role in contributing to local environmental sustainability efforts; (3) Gather suggestions from residents for improving the environmental initiatives in their respective barangays; and (4) Develop a proposed five-year Corporate Social Responsibility Plan based on the themes that emerged from the community discussions.

MATERIALS AND METHODS

The methodology employed in this study on community perceptions and environmental sustainability in selected barangays in Mariveles, Bataan, follows a qualitative approach. Qualitative research involves the systematic collection and

analysis of non-numerical data to understand and interpret social phenomena. According to Creswell (2014), qualitative research methods are characterized by their focus on exploring meanings, experiences, and the complexities of human behavior within specific contexts. In this study, qualitative methods were used to gather in-depth insights into residents' perceptions regarding the current environmental status and their engagement with sustainability initiatives.

This research was anchored on a developmental design, which is particularly effective in exploring community perspectives and generating actionable insights for program development. As noted by Patton (2015), developmental designs facilitate the understanding of how community members perceive their roles in environmental management and provide a framework for developing interventions that are responsive to local needs. In the context of this study, the developmental design involved conducting interviews and focus group discussions with residents from Barangays Alas-Asin, Baseco, and Sisiman to assess their views on environmental conditions and gather suggestions for improving local initiatives.

Data collection was conducted through semi-structured interviews and focus group discussions, which allowed participants to express their thoughts and experiences freely while ensuring that key topics were covered. This approach enabled the researchers to capture rich narratives that reflect the complexities of community engagement in environmental sustainability efforts. Each session was audio-recorded with participants' consent, transcribed verbatim, and analyzed thematically to identify common patterns and themes in the data (Braun & Clarke, 2006).

The selection of participants was based on purposive sampling to ensure that a diverse range of perspectives was included. The researchers engaged

with community leaders, local residents, and stakeholders involved in environmental initiatives within the barangays. A total of 30 participants (10 per barangay) were recruited across the three barangays.

To enhance the credibility of the findings, member checking was employed. This process involved sharing preliminary findings with participants to verify the accuracy of interpretations and ensure that their voices were accurately represented (Lincoln & Guba, 1985). Additionally, triangulation was utilized by comparing data from different sources—such as interviews, focus groups, and the results of the previously accomplished quantitative study that served as the inspiration to conduct this research—to strengthen the validity of the results.

Thematic analysis was utilized to analyze the data collected from interviews and focus groups. This method involved coding the data to identify significant themes related to community perceptions of environmental conditions, roles in sustainability efforts, and suggestions for improving initiatives (Braun & Clarke, 2006). The analysis aimed to provide insights into how residents perceive their environment and their involvement in addressing local challenges.

By employing a qualitative approach within a developmental design framework, this study provided a comprehensive understanding of community perspectives on environmental sustainability in selected barangays of Mariveles, Bataan. The qualitative data collected allowed for an exploration of themes that emerged from residents' experiences and perceptions, ultimately contributing to the formulation of a proposed five-year Corporate Social Responsibility (CSR) plan tailored to local needs.

Conceptual Framework

In this study, the Input-Process-Output framework was considered:

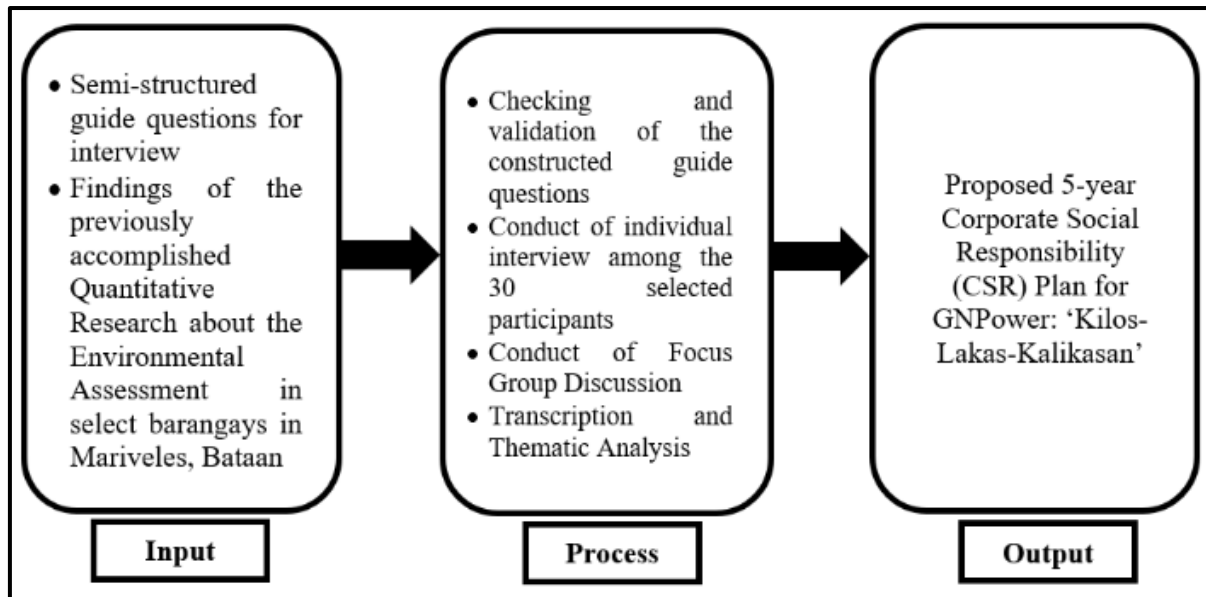


Figure 1. The I-PO Framework on the Community Perspectives and Initiatives for Environmental Sustainability Toward a Proposed 5-Year Corporate Social Responsibility Plan in Mariveles, Bataan

This study employs the Input-Process-Output (I-P-O) model as its conceptual framework to systematically investigate community perceptions and environmental sustainability initiatives in selected barangays of Mariveles, Bataan. The I-P-O framework provides a structured approach that elucidates how specific inputs lead to processes that ultimately yield meaningful outputs. By utilizing this model, the research aims to analyze the interrelationships between community insights and the development of effective environmental strategies.

In the input phase, two key components are utilized: semi-structured guide questions for interviews and findings from a previously conducted quantitative study on environmental assessment in select barangays of Mariveles, Bataan. The semi-structured guide questions were designed to elicit detailed responses from participants regarding their perceptions of local environmental conditions, their roles in sustainability efforts, and their suggestions for improving existing initiatives. This flexible format allows participants to express their views while ensuring that essential topics relevant to the study’s objectives are thoroughly explored. Additionally, the findings from the earlier quantitative study provide a contextual foundation for this qualitative research, offering insights into community perceptions of environmental issues and informing the development of the guide questions.

The process phase encompasses several critical steps aimed at effectively gathering and analyzing qualitative data. Initially, the constructed guide questions underwent a rigorous checking and validation process involving experts in qualitative research and environmental studies. This validation ensured that the questions were relevant, clear, and capable of eliciting meaningful responses from participants. Following this, individual interviews were conducted with 30 selected participants from Barangays Alas-Asin, Baseco, and Sisiman. These interviews provided a platform for participants to share their personal experiences and insights regarding local environmental conditions and sustainability initiatives. In addition to individual interviews, focus group discussions were organized to facilitate collective dialogue among community members, encouraging richer exchanges of ideas and perspectives on environmental issues. After data collection, all interviews and focus group discussions were transcribed verbatim, followed by thematic analysis to identify common themes and patterns within the data. This analytical approach enabled researchers to distill complex narratives into coherent themes that reflect community perceptions and suggestions for enhancing local environmental initiatives.

The output of this study is a proposed five-year Corporate Social Responsibility (CSR) plan for GNPowr titled “Kilos-Lakas-Kalikasan”. This plan is designed to address the specific needs and

aspirations of residents in the selected barangays based on the insights derived from both the input and process phases. By employing the I-P-O framework, this study led to consider actionable recommendations that can enhance community engagement in environmental management efforts while fostering sustainable practices within Mariveles, Bataan. Ultimately, this research contributes to more effective environmental strategies that resonate with local communities and promote long-term sustainability.

Population and Sample

In this qualitative study focusing on community perceptions and environmental sustainability initiatives in selected barangays of Mariveles, Bataan, the researchers employed purposive sampling to select participants from the population of interest. This non-probability sampling technique was chosen to ensure that individuals with relevant experiences and insights regarding local environmental issues were included in the study. The target population consisted of residents from three barangays: Alas-Asin, Baseco, and Sisiman.

A total of 30 participants were selected for this study, with 10 individuals from each barangay. The selection criteria included residents who were actively engaged in community activities or had knowledge about local environmental conditions and sustainability initiatives. By utilizing purposive sampling, the researchers aimed to capture a diverse range of perspectives that reflect the unique challenges and opportunities present in each barangay.

The rationale behind selecting 10 participants from each barangay was to ensure representation across various demographic factors such as age, gender, and socioeconomic status. This approach allowed for a rich collection of narratives that could provide deeper insights into community perceptions and experiences related to environmental sustainability. According to Patton (2015), purposive sampling is effective in qualitative research as it facilitates the selection of information-rich cases that can illuminate the research questions.

The strategic use of purposive sampling and the selection of participants based on their engagement with environmental issues demonstrated the methodological rigor employed in

this study. By focusing on individuals who possess relevant knowledge and experiences, the researchers aimed to gather meaningful data that accurately reflects the perceptions of residents in the selected barangays. This approach contributes to a comprehensive understanding of community perspectives, ultimately informing the development of the proposed five-year Corporate Social Responsibility (CSR) plan titled “Kilos-Lakas-Kalikasan”.

Research Instruments

For this qualitative study, the researchers utilized a semi-structured interview guide as the primary research instrument. A semi-structured interview guide is a crucial tool in qualitative research that facilitates in-depth conversations with participants while allowing for flexibility in responses. According to Kvale and Brinkmann (2015), semi-structured interviews enable researchers to explore participants’ perspectives and experiences in detail, providing rich qualitative data that can illuminate complex social phenomena.

The interview guide was developed based on insights from the previously conducted quantitative research on environmental assessment in selected barangays of Mariveles, Bataan, as well as relevant literature on community engagement and environmental sustainability. The guide included open-ended questions designed to encourage participants to share their thoughts and experiences regarding local environmental conditions, their roles in sustainability efforts, and suggestions for improving existing initiatives. This format allowed participants to express their views freely while ensuring that key topics related to the study's objectives were addressed.

The semi-structured interview guide comprised several thematic areas, including community perceptions of environmental quality, individual roles in promoting sustainability, challenges faced in engaging with environmental initiatives, and recommendations for enhancing local efforts. Each thematic area aimed to elicit detailed narratives that reflect the complexities of community engagement in environmental management.

To enhance the depth of data collected, follow-up questions were incorporated throughout the interviews. These questions aimed to probe deeper into participants’ responses, allowing for clarification and exploration of specific points

raised during the discussion. This approach ensured that the researchers captured a comprehensive understanding of participants' perspectives and experiences.

The use of a semi-structured interview guide not only facilitated the collection of rich qualitative data but also allowed for adaptability during interviews. Researchers could adjust their questioning based on participants' responses, fostering a conversational atmosphere that encouraged openness and reflection. By employing this method, the study aimed to gather meaningful insights that would inform the development of the proposed five-year Corporate Social Responsibility (CSR) plan titled "Kilos-Lakas-Kalikasan".

Data Analysis

In this qualitative study, the researchers applied thematic analysis to analyze the data collected from the semi-structured interviews and focus group discussions. Thematic analysis is a widely used qualitative analytic method that enables researchers to identify, analyze, and report patterns (themes) within qualitative data (Braun & Clarke, 2019). This approach is particularly effective in exploring participants' perspectives and experiences, providing a rich understanding of the complexities surrounding community engagement in environmental sustainability initiatives.

The data analysis process began with the transcription of all interviews and focus group discussions. Each audio recording was transcribed verbatim to ensure that participants' voices were accurately captured. This meticulous transcription process allowed for a detailed examination of the data, facilitating a comprehensive understanding of the narratives shared by participants. According to Nowell et al. (2017), accurate transcription is crucial in qualitative research as it serves as the foundation for subsequent analysis.

Following transcription, the researchers conducted an initial reading of the transcripts to familiarize themselves with the content and identify preliminary themes. This step involved highlighting significant statements and noting recurring ideas related to community perceptions of environmental conditions, individual roles in sustainability efforts, and suggestions for enhancing local initiatives. As noted by Braun and Clarke (2019), this familiarization phase is essential for developing an

intuitive sense of the data before engaging in more structured analysis.

The next phase involved coding the data, where specific segments of text were labeled with codes that captured key concepts or ideas. This coding process was iterative, allowing researchers to refine codes as they progressed through the data. The codes were then grouped into broader themes that reflected common patterns across participants' responses. This thematic organization enabled the researchers to distill complex narratives into coherent themes that highlighted community sentiments regarding environmental issues.

To enhance the credibility and rigor of the analysis, member checking was employed. This process involved sharing preliminary findings with a subset of participants to verify the accuracy of interpretations and ensure that their perspectives were represented faithfully (Lincoln & Guba, 1985). By incorporating feedback from participants, the researchers aimed to strengthen the validity of their findings and ensure that the themes identified resonated with community members' experiences.

The final output of the thematic analysis consisted of a comprehensive set of themes that provided insights into community perceptions and suggestions for improving environmental sustainability initiatives. These findings served as a critical foundation for developing the proposed five-year Corporate Social Responsibility (CSR) plan titled "Kilos-Lakas-Kalikasan." By employing thematic analysis, this study aimed to generate meaningful recommendations that could inform effective interventions tailored to meet the needs and aspirations of residents in Mariveles, Bataan.

RESULTS AND DISCUSSION

Part I assesses community members' perceptions of current environmental conditions in their barangays, focusing on their views regarding water quality, air quality, and the overall environmental status. Part II explores how residents perceive their roles in contributing to local environmental sustainability efforts, including their involvement in community initiatives and personal practices that support environmental conservation. Part III gathers suggestions from residents for improving environmental initiatives in their respective barangays, highlighting community-driven ideas and recommendations for local action.

Part IV proposes a five-year Corporate Social Responsibility (CSR) Plan titled “Kilos-Lakas-Kalikasan”, aimed at building collaboration between GNPow and residents to enhance environmental protection and sustainability efforts in the community.

On Community Members’ Perceptions of Current Environmental Conditions

1. Access to Safe Water Sources

Participants consistently expressed concern regarding their limited access to safe and reliable drinking water. Several respondents reported dependence on alternative water sources such as shallow wells, particularly during periods of water interruption, despite uncertainty about water quality. As expressed by Participant 4, “Sometimes, we struggle to find clean water. Some of us drink from wells that we are not sure are safe,” while Participant 13 similarly noted reliance on wells during water shortages. Participant 27 emphasized the need for infrastructure improvement, stating that “There should be a better water system here so that everyone has access to clean drinking water”.

These narratives reflect persistent challenges related to water insecurity, particularly in peri-urban and industrial communities. Access to safe drinking water remains a global concern, especially in developing regions where infrastructure limitations and uneven service delivery are common (Smith et al., 2020; WHO & UNICEF, 2021). Studies indicate that reliance on unregulated water sources significantly increases the risk of waterborne diseases and undermines community trust in local service providers (Bain et al., 2019; Foster et al., 2020).

In the Philippine context, water access issues are often exacerbated by rapid urbanization and industrial activity, which place additional stress on local water systems (Asian Development Bank, 2022).

The findings suggest that community members are not only aware of water quality issues but are also cognizant of the structural deficiencies that limit equitable access. This underscores the importance of integrating community perceptions into local water governance and CSR-driven infrastructure planning. Participatory water management approaches have been shown to improve both service delivery and public

confidence in environmental interventions (Jiménez et al., 2019; Hurlbert & Gupta, 2021).

2. Air Quality Awareness

Participants demonstrated heightened concern regarding air quality, particularly in relation to health impacts and the absence of accessible information. Participant 2 observed that “people here get sick more often because of pollution,” while also expressing uncertainty about air quality monitoring. Similarly, Participant 19 noted seasonal increases in dust exposure, especially during summer months, which adversely affected children’s health. Participant 22 emphasized the lack of information, stating, “We have no information about the air quality here. We need to know what the risks are”.

These accounts point to a significant gap in environmental risk communication at the community level. Research highlights that public awareness of air quality conditions is a critical determinant of preventive health behavior and community engagement in environmental action (Johnson et al., 2021; Snyder et al., 2020). In many low- and middle-income settings, air pollution monitoring data are either unavailable or not effectively disseminated to local populations, limiting community capacity to respond to environmental health risks (Health Effects Institute, 2022).

The absence of accessible air quality information contributes to feelings of uncertainty and vulnerability among residents. Studies suggest that transparent communication and community-based monitoring initiatives can enhance environmental literacy and empower residents to participate in mitigation efforts (English et al., 2021; Castell et al., 2020). These findings highlight the potential role of local governments and CSR programs in strengthening environmental communication strategies and integrating community-based air quality awareness initiatives.

3. Community Engagement in Environmental Issues

Participants acknowledged the presence of environmental initiatives such as clean-up drives but described these efforts as irregular and insufficiently supported. Participant 8 noted that “sometimes there are clean-up drives, but they are not regular,” while Participant 17 expressed frustration over limited access to information about

environmental activities. Participant 30 emphasized that consistent programming could increase community participation, stating that “if there were regular activities for the environment, people in the barangay would be more active”.

These perceptions reflect broader challenges related to sustaining community engagement in environmental management. While short-term activities may raise awareness, literature suggests that long-term engagement requires consistent institutional support, clear communication, and shared decision-making processes (Thompson et al., 2019; Reed et al., 2020). Sporadic initiatives, when not embedded within a broader participatory framework, often fail to generate lasting behavioral change or community ownership (Berkes, 2020; Newig et al., 2021).

The findings indicate that community members are willing to participate in environmental initiatives but require more structured and predictable opportunities for involvement. Participatory environmental governance models emphasize the importance of co-creation, where communities are actively involved in planning, implementation, and evaluation processes (Ansell & Torfing, 2021; Few et al., 2020). These insights support the need for CSR programs that move beyond one-time activities toward sustained, community-led environmental engagement.

4. Perceived Health Impacts

Participants directly associated environmental conditions with adverse health outcomes, particularly respiratory illnesses and vulnerability among children and the elderly. Participant 6 linked frequent coughs and colds to “bad air and dirty water,” while Participant 13 highlighted the susceptibility of older adults. Participant 25 emphasized the need for preventive knowledge, stating, “We need to know how to prevent diseases caused by pollution here”.

These perceptions align with extensive evidence linking environmental degradation to public health risks. Exposure to polluted air and contaminated water has been consistently associated with respiratory diseases, gastrointestinal infections, and increased morbidity among vulnerable populations (Martinez et al., 2020; Landrigan et al., 2019). Recent studies further emphasize that communities living near industrial zones face heightened cumulative health risks due to prolonged

exposure to multiple environmental stressors (Hajat et al., 2021; Schraufnagel et al., 2019).

The participants’ narratives demonstrate a clear awareness of the health–environment nexus, suggesting readiness for preventive and educational interventions. Public health scholars argue that integrating environmental education with community health programs can significantly improve disease prevention and adaptive capacity (Prüss-Ustün et al., 2019; Maibach et al., 2021). These findings reinforce the importance of CSR initiatives that incorporate health-focused environmental education and risk reduction strategies tailored to local community needs.

On Residents’ Views on Their Role in Contributing to Local Environmental Sustainability Efforts

1. Sense of Responsibility

Participants consistently articulated a strong sense of personal and collective responsibility toward environmental stewardship. Statements such as Participant 1’s view that “we should all help clean our surroundings” and Participant 11’s expressed desire to be “part of the solution” reflect an internalized understanding of civic and environmental duty. Participant 24 further emphasized the importance of unity, suggesting that collective effort would lead to improved environmental conditions within the barangay.

This sense of responsibility aligns with research highlighting the role of pro-environmental values and moral norms in shaping sustainable behavior (Fernandez et al., 2021; Steg et al., 2019). Studies indicate that when individuals perceive environmental protection as part of their social and civic obligations, they are more likely to engage in environmentally responsible actions (Bamberg et al., 2021; Whitmarsh et al., 2020). In community-based settings, such shared responsibility strengthens social cohesion and supports the sustainability of local environmental initiatives (Cheng et al., 2021).

The findings suggest that residents already possess a foundational environmental ethic that can be further leveraged through structured programs. CSR initiatives that recognize and reinforce this sense of responsibility may enhance community ownership and long-term participation (Aguinis & Glavas, 2019; Jamali et al., 2020).

2. Barriers to Participation

Despite strong pro-environmental intentions, participants identified practical barriers that hinder their active involvement in sustainability initiatives. Time constraints related to work, family responsibilities, and daily livelihoods were the most frequently cited challenges. Participant 3 and Participant 12 both highlighted the difficulty of balancing environmental participation with personal obligations, while Participant 29 emphasized the need for more accessible participation mechanisms.

These findings reflect a well-documented gap between environmental attitudes and actual behavior, often referred to as the “intention–action gap” (Kollmuss & Agyeman, 2002; Gifford & Chen, 2019). Recent studies emphasize that structural and contextual factors, such as time availability, convenience, and accessibility, significantly influence community participation in environmental programs (Garcia & Ramos, 2022; Moser, 2020).

The results underscore the importance of designing flexible and inclusive engagement strategies, such as short-duration activities, rotating schedules, or integrating environmental actions into existing community routines. Evidence suggests that reducing participation barriers increases engagement, particularly among working households and marginalized groups (Newig et al., 2021; Larson et al., 2020).

3. Importance of Education and Awareness

Participants repeatedly emphasized education and awareness as critical enablers of environmental action. Calls for seminars, workshops, and information-sharing activities reflected a desire for knowledge that could guide informed decision-making. As Participant 8 noted, access to information would help residents “make the right decisions,” while Participants 17 and 26 stressed the role of education in motivating participation and responsible environmental behavior.

This theme is strongly supported by literature emphasizing environmental education as a key driver of sustainable behavior and community empowerment (López et al., 2020; Monroe et al., 2019). Environmental education enhances awareness of ecological issues, builds problem-solving skills, and fosters long-term commitment to sustainability initiatives (Ardoin et al., 2020; Wals et al., 2022).

Moreover, community-based environmental education programs have been shown to be most effective when they are locally contextualized and participatory in nature (Mezirow, 2018; Reid et al., 2021). The findings suggest that integrating educational components into CSR and barangay-level initiatives could significantly strengthen residents’ capacity to engage meaningfully in environmental sustainability efforts.

4. Collaborative Efforts

Participants recognized collaboration as a critical factor in enhancing the effectiveness of environmental initiatives. Statements from Participants 7, 19, and 30 emphasized cooperation, mutual support, and collective goal attainment. These perspectives highlight the importance of social capital and collective action in addressing complex environmental challenges at the community level.

Research consistently demonstrates that collaborative approaches lead to more effective and sustainable environmental outcomes, particularly when communities work collectively with local institutions and stakeholders (Santos & Cruz, 2021; Ostrom, 2020). Social networks, trust, and shared norms facilitate coordination and reduce the costs of collective action, thereby increasing the likelihood of sustained participation (Pretty & Ward, 2021; Bodin, 2017).

The findings suggest that fostering partnerships among residents, barangay officials, and external stakeholders can amplify the impact of environmental initiatives. Collaborative governance frameworks emphasize co-creation, shared decision-making, and mutual accountability as key components of successful community-based sustainability efforts (Ansell & Gash, 2018; Emerson et al., 2020).

Suggestions for Improving Environmental Initiatives

1. Regular Community Clean-Up Drives

Participants strongly emphasized the need for regular and structured community clean-up drives as a practical strategy for improving environmental conditions within their barangays. Participant 4 stated, “We need regular clean-up drives to maintain the cleanliness of our barangay,” while Participant 16 highlighted the importance of scheduling to increase participation. Similarly, Participant 27 suggested monthly clean-up activities

involving all residents to ensure collective responsibility.

These suggestions underscore the role of routine, community-based environmental actions in fostering a culture of cleanliness and shared accountability. Research indicates that regular clean-up drives not only improve physical environmental conditions but also strengthen social norms related to environmental responsibility (Bautista et al., 2019; Schultz et al., 2018). When activities are conducted consistently, they become embedded in community routines, increasing participation and long-term commitment (Nigbur et al., 2020; De Young & Kaplan, 2021).

Moreover, scheduled environmental activities have been shown to reduce participation fatigue by allowing residents to plan their involvement in advance (Reid et al., 2021). These findings suggest that institutionalizing clean-up drives through barangay ordinances or CSR-supported programs could significantly enhance their effectiveness and sustainability.

2. Enhanced Communication from Local Authorities

Participants expressed a strong need for more transparent and consistent communication from local authorities regarding environmental projects and programs. Participant 2 emphasized that “local officials should communicate with us more often” while Participants 13 and 22 highlighted the importance of being informed to participate meaningfully.

Effective communication is a critical component of participatory environmental governance. Studies show that timely and transparent information-sharing increases public trust, improves participation rates, and enhances the perceived legitimacy of environmental initiatives (Cruz et al., 2020; Nabatchi et al., 2017). Conversely, limited communication can lead to disengagement, misinformation, and reduced community support (Quick & Feldman, 2019; Fung, 2020).

The findings indicate that residents are willing to engage but require accessible platforms, such as regular meetings, community bulletin boards, and digital communication channels, to stay informed. Strengthening communication mechanisms at the barangay level aligns with best practices in collaborative governance and supports more

inclusive decision-making processes (Ansell & Torfing, 2021; Emerson et al., 2020).

3. Educational Workshops on Sustainability

Participants consistently recommended educational workshops and training sessions focused on sustainability practices. Participant 10 noted the usefulness of workshops on waste management, while Participants 11 and 28 emphasized learning as a pathway to becoming more effective environmental stewards.

Environmental education has been widely recognized as a foundational strategy for promoting sustainable behavior at the community level. Educational interventions improve environmental literacy, increase self-efficacy, and empower individuals to translate knowledge into action (Reyes & Lim, 2021; Ardoin et al., 2020). Workshops that are practical, locally relevant, and participatory have been found to be particularly effective in community settings (Wals et al., 2022; Monroe et al., 2019).

The participants’ suggestions highlight a desire not only for information but also for skill-building opportunities that enable residents to contribute meaningfully to environmental initiatives. Integrating sustainability workshops into CSR programs and barangay activities may therefore enhance both individual capacity and collective action.

4. Incentives for Participation

Participants also suggested the use of incentives and recognition to motivate greater participation in environmental initiatives. Participant 8 proposed incentives to increase involvement, while Participants 19 and 22 emphasized rewards and recognition for active contributors.

The use of incentives reflects an understanding of motivational dynamics in community participation. Research suggests that while intrinsic motivation is important, extrinsic incentives, such as recognition, certificates, or small rewards, can effectively encourage initial engagement, particularly in volunteer-based programs (Alvarez et al., 2022; Frey & Jegen, 2021). Recognition-based incentives have been shown to strengthen social norms and reinforce positive environmental behavior without undermining intrinsic motivation (Bénabou & Tirole, 2019; Lindenberg & Steg, 2021).

These findings suggest that incentive mechanisms should be designed carefully to complement, rather than replace, residents’ existing sense of responsibility. CSR initiatives that incorporate symbolic rewards, public recognition, or community-based acknowledgment may enhance participation while sustaining long-term commitment to environmental goals.

On Five-year Corporate Social Responsibility Plan – ‘Kilos-Lakas-Kalikasan’

The proposed five-year Corporate Social Responsibility (CSR) plan for GNPowder, titled Kilos-Lakas-Kalikasan, is designed as a

comprehensive and integrated framework that addresses community development, environmental sustainability, and long-term organizational viability. Anchored on the triple bottom line approach—People, Planet, and Profit—the plan reflects contemporary CSR models that emphasize balanced value creation for society, the environment, and businesses (Elkington, 2018; Hahn et al., 2020). Such an approach recognizes that sustainable development requires the alignment of social welfare, ecological protection, and economic performance.

<h2 style="text-align: center;">Proposed 5-Year CSR Plan for GN Power: “Kilos-Lakas-Kalikasan”</h2> <h3 style="text-align: center;">Five-year KLK Plan from 2024-2028</h3>					
3 P’s	2024	2025	2026	2027	2028
People (Knowledge, Awareness, Discipline, Education, Engagement)	Sanitation and Hygiene Workshops	Free Medical and Health Programs	Sanitation and Hygiene Workshops	Free Medical and Health Programs	Impact Assessment
	Annual Cleanup Drive for River, Other Water Sources, and Surroundings for Sustainability				
	Environmental Education, Empowerment, and Establishment of Volunteer Groups				
	Barangay and Municipality Orders regarding Waste Segregation, Tree Planting and Caring, No Littering, No Smoking, and No Burning of Waste				
Planet (Home Water, Air, and River)	Installation of Air Quality Monitoring Devices		Corporate Partnerships for Environment		Impact Assessment
	Water Quality Testing at different Sources for Households		Quality Testing of River for Cleanliness and Sanitation		
	Truck and Schedule of Community Garbage Collection				
	Annual Quality Testing of Water Source, Ambient Air, and River for Sustainability				
Profit (Budget, Cost, Consumption Reduction)				Decrease amount of Budget once long term objectives are reached	Impact Assessment

Year of Risk Management

Year of Productivity & Sustainability

Year of Impact Assessment

Under the People pillar, the plan includes sanitation and hygiene workshops as well as free medical and health programs aimed at improving community well-being. These initiatives directly respond to residents’ expressed concerns regarding health risks associated with environmental degradation. Research indicates that CSR programs focusing on health promotion and preventive care can significantly enhance community resilience and trust in corporate actors, particularly in industrial and peri-urban settings (Sharma et al., 2020; Porter et al., 2023). Health-centered CSR initiatives also contribute to improved quality of life and social capital, which are essential for sustained community engagement in environmental programs (Visser, 2021).

The Planet pillar addresses key environmental issues identified in the study, including waste management, environmental awareness, and pollution monitoring. The proposed annual cleanup drives and environmental education programs aim to institutionalize pro-environmental behavior and enhance environmental literacy among residents. Studies have shown that regular community-based environmental activities, combined with education, are effective in fostering long-term behavioral change and collective responsibility (Ardoin et al., 2020; Wals et al., 2022). Environmental education initiatives further empower communities to participate actively in environmental governance and decision-making processes (Reed et al., 2020).

In addition, the plan proposes partnerships with relevant institutions for environmental initiatives,

including water quality testing at various sources and the installation of air quality monitoring devices. Such measures align with evidence suggesting that technological interventions and cross-sector partnerships enhance the accuracy, transparency, and effectiveness of environmental monitoring (Zhang et al., 2020; English et al., 2021). Corporate–community partnerships have been shown to strengthen accountability and improve environmental outcomes when local stakeholders are involved in data sharing and interpretation (Patel et al., 2019; Castell et al., 2020).

The Profit pillar emphasizes strategic budgeting, cost management, and consumption reduction strategies to ensure the long-term sustainability of CSR initiatives. Financial sustainability is increasingly recognized as a critical factor in determining the continuity and impact of CSR programs (Hahn et al., 2020; Sharma et al., 2020). By integrating efficient resource allocation and cost-saving measures, the plan ensures that environmental and social initiatives remain viable without compromising business performance. This alignment of economic and sustainability goals reflects best practices in responsible corporate governance (Eccles et al., 2019; Aguinis et al., 2020).

Lastly, the plan incorporates policy-oriented measures such as barangay and municipal ordinances on waste segregation and tree planting. These initiatives align with global recommendations emphasizing community-led waste management systems and nature-based solutions for urban sustainability (Jamwal et al., 2021; Uddin et al., 2021). Tree planting and green infrastructure development have been widely recognized for their role in improving air quality, enhancing urban resilience, and promoting community participation in environmental stewardship (Kabisch et al., 2019; World Health Organization, 2021). Institutionalizing these measures through local policies further strengthens their sustainability and ensures alignment with broader environmental governance frameworks.

Overall, the Kilos-Lakas-Kalikasan CSR plan reflects a context-responsive, evidence-based, and participatory approach to environmental sustainability. By addressing health, environmental protection, and financial sustainability in an

integrated manner, the plan aligns with international CSR best practices and responds directly to the needs and perspectives expressed by community members. As such, it provides a strong foundation for long-term corporate–community collaboration in advancing local environmental sustainability.

CONCLUSION

This qualitative study gives light on the perceptions of residents in Barangays Alas-Asin, Baseco, and Sisiman regarding their environmental conditions and sustainability efforts. The findings reveal significant concerns about access to safe water sources and air quality, with participants linking these issues directly to their health and overall well-being. While there is a strong sense of responsibility among community members to engage in environmental stewardship, barriers such as time constraints and limited awareness of local initiatives have hindered their active participation. These insights explain the critical need for improved infrastructure and resources to ensure that all residents have access to clean water and air, as well as the importance of effective communication from local authorities regarding environmental monitoring.

Additionally, the study emphasizes the vital role of education and community engagement in fostering a culture of sustainability. Participants expressed a desire for more frequent community activities, such as clean-up drives and educational workshops, which could empower them with the knowledge and skills necessary for effective environmental management. The recognition that collaborative efforts can enhance the effectiveness of sustainability initiatives indicates a community that is eager to take action but requires support from local government and organizations. Addressing these gaps will be essential for facilitating greater involvement from residents in improving their environmental conditions.

The proposed five-year Corporate Social Responsibility (CSR) plan, “Kilos-Lakas-Kalikasan,” aims to create a partnership between GNPower and community members focused on addressing environmental challenges. By integrating community feedback into this plan, it is expected that both GNPower and residents can work collaboratively towards sustainable solutions. This partnership has the potential to showcase a

more resilient community capable of tackling environmental issues, ultimately leading to an enhanced quality of life for all residents.

Based on the findings of the study and the proposed 5-Year CSR Plan, several recommendations were made to address the environmental challenges in Mariveles, Bataan effectively.

Firstly, local authorities should prioritize improving access to safe drinking water by investing in infrastructure such as water filtration systems and reliable water supply networks. Implementing rainwater harvesting systems could also provide an alternative source of clean water for households. These measures can significantly reduce reliance on unsafe water sources and improve overall community health.

Secondly, educational programs focused on environmental issues, such as proper waste management and the importance of clean water and air, should be developed and implemented. Workshops and seminars can empower residents with knowledge about sustainable practices and the health impacts associated with poor environmental conditions. This education can foster a more informed community that actively participates in environmental protection efforts.

Thirdly, regularly scheduled community clean-up drives, tree planting, and other environmental initiatives should be organized to encourage active participation among residents. These activities not only promote cleanliness but also strengthen community bonds and foster a sense of responsibility towards the environment. Collaborating with local organizations can enhance the effectiveness of these initiatives.

Furthermore, local government officials should enhance their communication strategies to keep residents informed about environmental monitoring efforts and available resources. Regular public meetings or forums can provide a platform for residents to voice their concerns and suggestions regarding local environmental issues. This two-way communication can help build trust between the community and local authorities.

Lastly, the proposed “Kilos-Lakas-Kalikasan” CSR plan should be implemented to establish a structured partnership between GNPow and the community. This plan should focus on collaborative projects aimed at addressing specific environmental

challenges identified by residents. By aligning corporate initiatives with community needs, both parties can work together effectively to promote sustainable practices and improve the overall quality of life in the barangays.

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