



Community Engagement in Coastal Conservation: A Content Analysis of Bantay Dagat's Educational Campaigns in Del Carmen, Surigao del Norte

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Abstract

This study explores how educational campaigns facilitate community involvement in coastal conservation by examining the content of Information, Education, and Communication (IEC) materials created by Bantay Dagat in Del Carmen, Surigao del Norte, between 2015 and 2025. Anchored in Environmental Communication Theory, the study utilizes qualitative content analysis to pinpoint recurring themes, communication tactics, and cultural aspects present in the campaign materials. Results indicate that Bantay Dagat's initiatives focus on conserving marine biodiversity, promoting sustainable fishing, and encouraging community accountability, articulated through local dialect, cultural motifs, and principles such as bayanihan and care for the environment. Heroic and crisis framing, along with narrative and testimonial methods, strongly connects with local audiences. Although community involvement is strong, digital approaches and outreach to external audiences, especially tourists and younger digital natives, remain limited. The study concludes that Bantay Dagat's culturally based and inclusive communication initiatives are essential for improving local environmental awareness and engagement. It suggests broadening digital approaches, segmenting audiences, and designing participatory campaigns to enhance the effectiveness and reach of upcoming conservation efforts.

Keywords: Coastal Conservation, Bantay Dagat, Community Engagement, Environmental Communication, IEC Materials, Content Analysis, Del Carmen, Marine Stewardship

Introduction

The Philippines, being an archipelago, possesses one of the most diverse and productive marine ecosystems globally. With more than 36,000 kilometers of coastline, it contains vital habitats like coral reefs, seagrass meadows, and mangrove forests that function as breeding and feeding areas for various marine species. However, these ecosystems face growing threats from overfishing, coastal development, pollution, and the negative effects of climate change. Given these threats, community-based resource management has emerged as a fundamental aspect of the nation's coastal conservation approach. A community-driven initiative is the Bantay Dagat or Sea Patrol, a volunteer-led coastal enforcement and advocacy initiative created in partnership with the



Bureau of Fisheries and Aquatic Resources (BFAR), local government units (LGUs), and multiple stakeholders. Bantay Dagat is essential for enforcing fisheries regulations, overseeing marine protected areas (MPAs), and advocating for sustainable fishing practices. Beyond its enforcement function, Bantay Dagat participates in routine meetings with law enforcement personnel, conducts information, education, and communication (IEC) initiatives related to fisheries regulations and marine conservation within local communities, and is involved in the identification, pursuit, and arrest of individuals who violate fisheries laws (Maderazo & Advisors S. S. G., 2016).

In Del Carmen, Surigao del Norte, where the largest contiguous mangrove forest in the Philippines is located, the Bantay Dagat has played a crucial role in environmental conservation and community organization. The municipality is recognized for its commitment to merging conservation with sustainable ecotourism and education, earning national recognition for its exemplary model of environmental governance (Hassen, 2024). Community groups and stakeholders have collaborated on various initiatives to educate, empower, and engage residents, particularly young people and fishermen, in coastal conservation efforts. While the enforcement efforts of Bantay Dagat are thoroughly recorded, there has been less focus on their educational campaigns, especially concerning how they shape environmental narratives, encourage conservation principles, and affect community participation. Grasping the essence of these campaigns is crucial for assessing how well communication strategies promote behavioral change and collaborative efforts aimed at sustainability.

Many research efforts have highlighted the importance of community-based resource management and the enforcement actions of Bantay Dagat in various coastal areas of the Philippines. Previous studies have emphasized the success of community-based enforcement and ecological outcomes of MPA management. For example, the LGU of Cortes, Surigao del Sur, was recognized for effective MPA management and social readiness (City of Tandag, 2024). Similarly, KNH-Germany, KNH-Philippines, and SIKAT (2024) have evaluated community-level conservation efforts in Siargao Island, reflecting growing momentum toward integrated marine conservation and livelihood initiatives. Key site visits included marine protected areas, livelihood initiatives, and the RAM PUMP water project, with both LGUs actively demonstrating commitment to building resilient and empowered communities. There is a limited number of empirical studies that thoroughly investigate the communication and educational methods utilized by these groups. Specifically, there is a lack of qualitative research regarding the content and presentation of educational campaigns aimed at fostering environmental awareness and motivating public involvement.

Additionally, current research often emphasizes the success of enforcement or the ecological results of marine protected areas (MPAs), frequently overlooking the communicative dynamics that promote community involvement, particularly in smaller towns like Del Carmen. Not much is understood regarding how Bantay Dagat integrates local culture, values, and community-specific knowledge systems into its educational materials. Addressing these gaps is vital, as impactful environmental communication fosters pro-environmental actions and supports grassroots conservation initiatives.



Objectives of the Study

This study seeks to examine how Bantay Dagat's educational campaigns promote community engagement in coastal conservation in Del Carmen, Surigao del Norte. Specifically, it aims to:

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1. Identify and categorize recurring themes and messages in Bantay Dagat's campaign materials.
2. Analyze how the campaigns frame environmental issues, cultural values, and conservation narratives.
3. Determine the communication strategies used to foster local participation and environmental stewardship.
4. Evaluate the contextual relevance and cultural appropriateness of the campaign messages.

This study holds significance in the context of community-based environmental management and communication approaches aimed at sustainable development. With the escalating challenges facing marine ecosystems due to human activities and climate change, the demand for impactful grassroots involvement becomes increasingly urgent. This study enhances our understanding of how environmental education initiatives particularly those by Bantay Dagat in Del Carmen serve as tools to promote environmental stewardship, cultural significance, and community involvement in coastal conservation.

Scope and Limitations

Scope

This study focuses on educational campaigns created, facilitated, or endorsed by the Bantay Dagat unit in Del Carmen from 2015 to 2025. It includes an analysis of posters, brochures, videos, social media content, published articles, and other public awareness materials. A qualitative content analysis approach is employed to:

- Identify dominant themes and messages.
- Analyze environmental issue framing and proposed solutions.
- Assess cultural and contextual relevance.
- Examine communication methods targeting diverse community sectors.

Limitations

Although this study provides useful insights, it has specific limitations:

- The study does not provide a quantitative assessment of the campaigns' effectiveness or their behavioral impact on the attitudes of individuals or communities.



- The study focuses solely on the educational initiatives of Bantay Dagat in Del Carmen and does not reflect the practices or materials of other municipalities or Bantay Dagat chapters across the country.
- The study encompasses only materials that were available or accessible to the investigator during the data-gathering phase; informal, unwritten, or verbal exchanges are excluded from the examination.
- The viewpoints of the campaign audience (such as young people, fisherfolk, and tourists) are not the main focus, though their implied involvement is considered through content assessment.
- This study relies solely on secondary data sources due to time constraints and challenges in data accessibility.

Despite these constraints, the study is expected to contribute significantly to the discussion surrounding environmental education and community-based conservation in the Philippines.

Review of Related Literature

Community-Based Coastal Resource Management and Bantay Dagat Initiatives

Community-Based Coastal Resource Management (CBCRM) in the Philippines has the capacity to address the identified vulnerabilities, improve resource management, and promote collaboration among key stakeholders, such as local communities, local government units (LGUs), and non-governmental organizations (NGOs), for participatory approaches (Boncan, 2021). Central to this strategy is enabling local stakeholders to serve as guardians of their marine ecosystems. One of the most notable instances of grassroots enforcement and conservation in the Philippines is Bantay Dagat, or Sea Patrol. Coastal Resource Management (CRM) involves actions that ensure the sustainable use and oversight of valuable resources found in coastal regions (Balilo, Candelaria, & Dioneda 2023).

The Coastal Resource Management (CRM) program in the Philippines was established to enhance local implementation of coastal conservation efforts. Key legislative measures, notably the Fisheries Code of 1998 (Republic Act No. 8550), introduced science-based procedures for regulating resource access and emphasized integrated management through inter-local government unit (LGU) collaboration, as mandated by the Local Government Code. Additionally, the Fisheries Code institutionalized community participation by establishing Fisheries and Aquatic Resource Management Councils (FARMCs) at various governance levels (Republic Act No. 8550, 1998; Calva, 2018). The important function of Bantay Dagat organizations in community engagement and education efforts is increasingly recognized. The roles that do not involve enforcement such as environmental advocacy, community engagement, and educational campaigns are being acknowledged more and more as vital for achieving sustainable coastal management results. As stated by the Municipality of Del Carmen (2024), the observance of MPA Day highlights the significance of safeguarding marine ecosystems and includes commitments such as constructing guardhouses to support Bantay Dagat initiatives.



Environmental Communication and Community Engagement

Environmental communication initiatives employ various methods—such as posters, social media, community meetings, and educational sessions—to present environmental concerns in ways that align with local values and average experiences. The concept of community involvement has been advocated to foster and enhance the community's active participation in safeguarding, preserving, and overseeing the sustainability of the environment (Calinao et al., 2021). Environmental communication has emerged as a more recognized area of research in the last few decades; however, I concur with the session's conveners that it remains poorly structured and unified, partly due to the diverse range of disciplines and traditions encompassed within it (Anderson, 2015). Studies show that alternative communication frameworks serve as a means to enhance networks for both discussions and social initiatives in environmental communication (Harris, 2017).

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Community engagement (CE) is a relational process that promotes understanding and assessment, participation, sharing of information and views regarding a concept, issue, or project, aimed at fostering social capital and improving social outcomes through decision-making (Johnston et al., 2018). Proponents and practitioners increasingly recognize that effective community engagement is vital for achieving both practical goals and the moral principles of scientific research (Reynolds & Sariola, 2018).

Bantay Dagat and Educational Campaigns

Environmental stewardship is defined as "the conscientious utilization (which includes preservation) of natural resources in a manner that considers the comprehensive and equitable interests of society, future generations, and various species...and acknowledges substantial accountability to society" (Worrell and Appleby 2000, 263; Gregory & Grant-Smith 2023). Although Bantay Dagat is primarily known for fisheries enforcement, some studies have acknowledged their role in community education and advocacy. For instance, in Del Carmen, Surigao del Norte, effective educational efforts by Bantay Dagat and LGU officials were credited for the town's recognition in marine protected area management (RARE, 2018). Educational programs involved community discussions, school-based workshops, and public awareness campaigns highlighting the importance of mangroves, seagrass beds, and coral reefs.

Similarly, in various coastal municipalities, Bantay Dagat units and LGUs have engaged communities through Information, Education, and Communication (IEC) efforts designed to promote environmental awareness and support for conservation regulations. The Coastal Conservation and Education Foundation (CCEF) (2024) launches the activity as part of Project SAVE: Sustainable Assistance to Vulnerable Ecosystems, an Adopt-an-MPA



program under CCEF's "Lend A Blue Hand" campaign, in collaboration with FULL SCALE and LGU Talisay. These initiatives include the annual provision of fishing gear to registered fisherfolk, fostering sustainable methods and aiding in economic growth. Funding for Coastal Resources Management (CRM) programs, which include enforcement activities such as patrolling and staff incentives, demonstrates a holistic strategy for MPA management that integrates economic growth, environmental care, and community involvement (Jama and Flores, 2024). However, a significant gap persists in systematic research assessing the specific content, strategies, and cultural context of these educational campaigns. The majority of evaluations emphasize enforcement results; yet, insufficient focus is placed on how educational programs influence community narratives about marine conservation and promote behavioral change.

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Cultural Relevance and Local Knowledge Integration

A crucial aspect of environmental education is incorporating traditional ecological knowledge (TEK). Traditional ecological knowledge (TEK) embodies this complexity by endorsing various practices, ranging from forecasting ecological changes to fostering spiritual connections between human and nonhuman entities (Albuquerque et al., 2021). It was also determined that indigenous knowledge can be effectively categorized into several groups, and that technical indigenous knowledge is more likely to be combined with scientific knowledge (Zulfadrim, Toyoda & Kanegae, 2019).

In the Philippine setting, affective strategies address the labor aspirations of Filipino workers by employing a community-focused approach that embodies the unique Filipino cultural concept of "bayanihan" (Soriano et al., 2021). Local environmental stewardship refers to the actions undertaken by individuals, groups, or networks of actors, driven by various motivations and capacities, to safeguard, nurture, or responsibly utilize the environment while aiming for environmental and/or social outcomes in varied social-ecological settings (Bennett et al., 2018). The conservation sector is placing greater emphasis on monitoring and evaluating management, governance, ecological, and social factors as part of a broader shift toward adaptive management and evidence-based conservation (Bennett, 2016). In Del Carmen, Surigao del Norte, where the Philippines' largest contiguous mangrove forest is located, the influence of cultural identity and the growth of ecotourism on environmental education initiatives has been considerable (Hassen, 2024). However, there is a scarcity of specific research outlining how Bantay Dagat's educational initiatives integrate local culture and values.

Synthesis of Related Concepts

This study is guided by three interconnected concepts: community-based coastal resource management, environmental communication, and environmental stewardship. Community-driven coastal resource management emphasizes the importance of enabling local stakeholders to actively engage in safeguarding and sustainably



utilizing their marine and coastal resources. It operates on the premise that individuals closest to the resources are most capable of managing them efficiently, particularly when they receive adequate support, training, and institutional assistance.

Environmental communication, on the other hand, entails the intentional creation and dissemination of messages regarding ecological topics that connect with particular audiences. This type of communication transcends mere information sharing; it encompasses presenting environmental issues through cultural, emotional, and strategic perspectives to foster awareness, concern, and changes in behavior. In coastal conservation, effective environmental communication aids in making scientific or policy-oriented information more accessible and relevant to local communities.

Environmental stewardship enhances both concepts by encouraging a sense of responsibility and concern for natural resources. It represents an attitude where individuals and communities view safeguarding the environment as a moral and social responsibility. Stewardship can be fostered through involvement, learning, and regular exposure to conservation beliefs rooted in local cultures and traditions. These ideas converge in the Bantay Dagat initiatives, which encompass not only the enforcement of marine protection regulations but also community education and advocacy efforts. Although enforcement actions tend to receive more attention, the communication strategies employed to engage with communities and nurture a collective sense of stewardship are not as well understood.

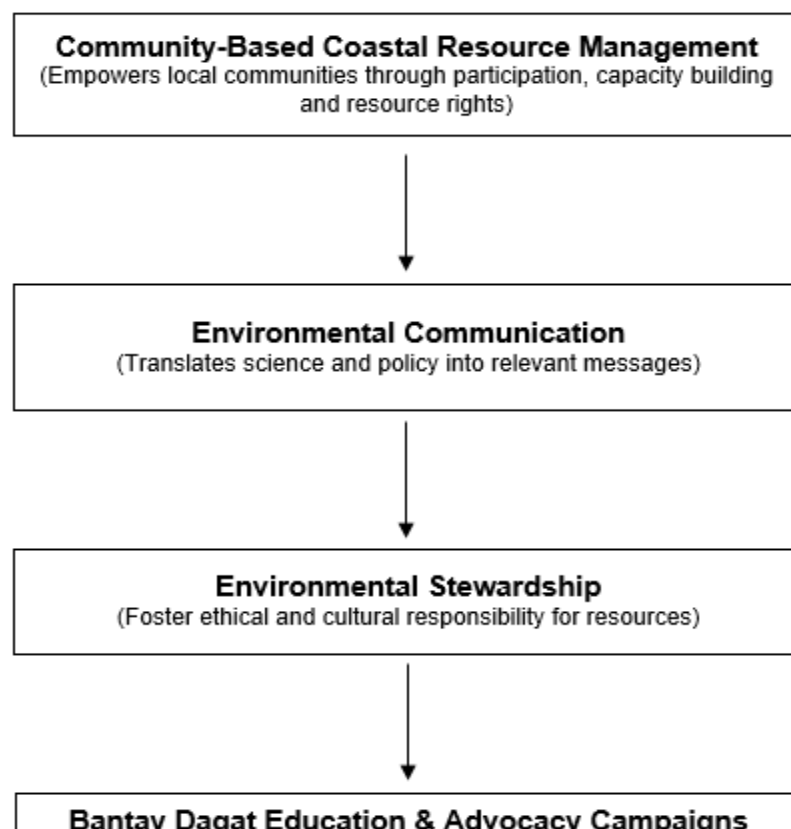




Figure 1. *The interconnectedness of three key concepts leads a to good enforcement of marine protection regulations, community education and advocacy initiatives.*

Theoretical Framework

Environmental conservation and protection programs are anchored in the strong beliefs and advocacy of NGOs and LGUs in many forms, directly or indirectly increasing awareness through social media campaigns. Through this approach, environmental communication theory connects various disciplines, including environmental studies, politics, cultural studies, geography, public health, journalism, media studies, philosophy, science, risk studies, psychology, social movement studies, and additional fields (Milstein & Mocatta, 2022). In this context, the domain within the communication discipline and a transdisciplinary metafield that spans various distinct and overlapping areas, environmental communication emphasizes dialogue and human interactions with our global environment. It explores the cultural and contextual significance of environmental messages and underscores the impact of media, public discourse, and education on shaping environmental behavior. This theory is especially important for understanding how Bantay Dagat's IEC (Information, Education, and Communication) materials address conservation issues, rally community support, and promote stewardship.

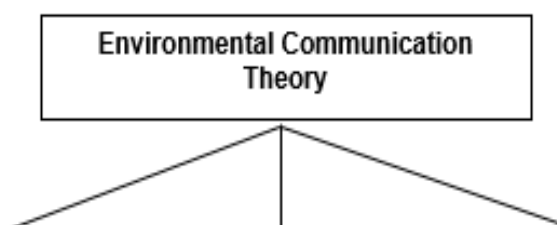






Figure 2. How *Environmental Communication Theory* serves as the overarching framework guiding the design and dissemination of *Bantay Dagat's Information, Education, and Communication (IEC) materials*.

Methodology

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This study employs a qualitative content analysis method to investigate the educational initiatives of Bantay Dagat in Del Carmen, Surigao del Norte. The methodology aims to explore how environmental messages, conservation principles, and community engagement are depicted and conveyed in the campaign materials created or supported by Bantay Dagat from 2015 to 2025. A qualitative descriptive research design utilizing conventional content analysis was applied. This approach is suitable for studies that focus on exploring a phenomenon when the existence of theoretical literature or research on the phenomenon is limited. In this manner, researchers use inductive logic, avoiding the imposition of any categorical system of data interpretation (Hsieh and Shannon, 2005; Picciotto and Fox, 2018). The focus is on identifying recurring themes, narratives, and communication strategies in the campaign materials without imposing preconceived categories.

Data Sources and Collection

This study examines secondary data consisting of educational campaign materials produced from 2015 to 2025. These resources include posters and infographics, brochures and flyers, videos and multimedia presentations, social media content (such as posts on Facebook and YouTube), as well as publications and advocacy pieces. Information was collected from accessible sources, including the official Facebook page and YouTube channel of the Del Carmen Local Government Unit (LGU) and Bantay Dagat, and documents focused on marine conservation, educational materials retained or shared by local non-governmental organizations (NGOs) and Bureau of Fisheries and Aquatic Resources (BFAR) collaborations, along with local media articles highlighting Bantay Dagat initiatives. The criteria for including materials were: (1) relevance to themes of coastal conservation, (2) creation or approval by Bantay Dagat or associated LGUs, and (3) availability during the data collection phase. Materials that emphasized enforcement only, without any educational elements, were excluded from the analysis.

Data Presentation and Analysis

This section outlines the results of the qualitative content analysis conducted on Bantay Dagat's educational campaign materials spanning from 2015 to 2025. Numerous documents were examined, such as posters, brochures, social media updates, videos, and articles published about coastal conservation in Del Carmen, Surigao del Norte. The data are categorized thematically into four primary groups that align with the research goals: (1) repetitive themes and messages, (2) framing of environmental and cultural narratives, (3) tactics for promoting local involvement, and (4) contextual and cultural significance.



1. Repetitive themes and messages

The key themes highlighted in the campaign materials consist of:

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- **Protection of Mangrove and Marine Ecosystems:** Resources consistently highlighted the significance of mangroves, coral reefs, and seagrass beds as vital ecosystems. Expressions like “Protektahi ang ato Kabakhawan” (Protect our Mangrove) and “Ampingi ug ignaje ang kabakhawan” (Safeguard and be gentle to the mangroves) frequently appeared in flyers and posters.
- **Sustainable Fishing Techniques:** Infographics and brochures advocated for responsible fishing methods, seasonal fishing bans, and the registration of fishing equipment, emphasizing regulations and BFAR recommendations.
- **Youth Involvement and Environmental Awareness:** Initiatives often focused on educational institutions and youth organizations, delivering messages that encouraged eco-camps, beach clean-ups, and mangrove restoration events.
- **Community as Guardians:** Various resources featured appeals for shared accountability through phrases such as “Bantay Dagat: Kauban Mo sa Pagpanalipod sa Kinaiyahan” (Bantay Dagat: Your Ally in Safeguarding Nature).

2. Framing of environmental and cultural narratives

The materials positioned conservation not merely as a scientific or ecological concern but as a moral, cultural, and communal responsibility. Essential framing methods included:

- **Localized Language and Indigenous Knowledge:** Numerous resources utilized the Cebuano or Surigaonon language, enhancing the relatability of the content. Conventional fishing wisdom was frequently illustrated in posters, blending cultural traditions with ecological stewardship.
- **Spiritual and Ethical Appeals:** Certain video campaigns presented environmental stewardship as an obligation to God and future generations, using phrases such as “Ang Kalikupan: Panalangin nga Atong Ampingan” (Nature is a Blessing We Must Safeguard).
- **Hero Stories:** Bantay Dagat volunteers were portrayed as defenders or stewards of the ocean, reinforcing a narrative of bravery, dedication, and community involvement.



3. Tactics for promoting local involvement

The educational resources utilized various methods to captivate the audience:

- **Visual Narrative:** Videos frequently featured dramatized accounts of illegal fishing and rescue missions, accompanied by informative commentary from local authorities or community representatives.
- **Acknowledgment and Rewards:** Initiatives showcased eco-heroes fishermen or young volunteers who participated in coastal clean-ups or MPA assessments. This acknowledgment encouraged involvement.
- **Engaging Community Initiatives:** Social media updates advertised activities such as beach clean-up, mangrove planting events, and community discussions. Numerous materials employed engaging calls to action, such as "Siargao It Up!" Mangrove Management Program
- **Collaboration with Schools and Churches:** Campaigns were aligned with educational initiatives and church announcements, enhancing trust and community engagement.

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4. Contextual and cultural significance

The educational initiatives were tailored for the local context in various ways:

- **Incorporation of Local Scenery and Individuals:** Videos and posters prominently featured local environments (e.g., the Del Carmen mangrove forest) and community members, enhancing relatability and authenticity.
- **Timeliness:** Campaigns were often launched alongside events like **Blue Barter Program, Mangrove Restoration**, World Wetland Day, or Fishing Ban Season, ensuring that the content remained current and relevant.
- **Cultural Harmony:** Resources respected regional traditions and values, incorporating ancestral ecological wisdom, affirming that conservation aligns with community identity.

Ethical Considerations

All analyzed materials are publicly available, and no human participants were directly involved in the study. Ethical research standards were upheld by ensuring that all sources are properly cited and that the interpretations remain objective, based solely on the presented content.



Trustworthiness

To ensure the reliability and integrity of the results, the following strategies were employed:

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- Triangulating sources to confirm themes across various forms of campaign materials.
- Reviewing new codes and categories with academic mentors or industry professionals.
- Detailed exploration of themes and contextual elements to guarantee richness and clarity in interpretation.

Results and Discussions

This section outlines the findings from the qualitative content analysis of Bantay Dagat's educational initiatives in Del Carmen, Surigao del Norte. The analysis included visual and written materials such as posters, brochures, social media posts, community announcements, and educational videos created or supported by Bantay Dagat from 2015 to 2025. Results are structured around four main themes derived from the study's goals: (1) recurring messages and themes, (2) framing of environmental and cultural narratives, (3) communication strategies, and (4) cultural relevance and contextual appropriateness.

1. Recurring Themes and Messages

A dominant set of themes emerged from the campaign materials, showcasing Bantay Dagat's unwavering environmental messaging:

Marine Biodiversity Conservation: Numerous materials displayed vibrant representations of mangroves, coral reefs, and seagrass ecosystems. The communications highlighted the environmental and economic significance of marine ecosystems, especially their role in sustaining fisheries and protecting shorelines. For instance, posters emphasized how mangroves protect coastlines and act as nurseries for fish species, MPIC (2020) supported by captions like "Protektahan ang mga Bakawan."

Sustainable Fishing Practices: Initiatives emphasized the importance of regulated fishing, adherence to legal gear, and compliance with marine protected areas (MPAs). Slogans such as "Saktong Pagpangisda, Kaugmaon kay Sigurado" (Sustainable fishing guarantees our future) were frequently utilized.



Community Responsibility and Environmental Stewardship: Conservation was presented as a collective ethical obligation. The concept of bayanihan (community cooperation) was often referenced, connecting environmental initiatives to Filipino cultural values. Illustrated banners showed community members planting mangroves or cleaning coastlines. Messaging emphasized environmental protection as a moral duty shared by all.

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Youth and Educational Outreach: Various resources aimed at the youth sought to inspire them to become "Bantay Dagat" or "Guardians of the Sea." This indicates a sustained approach focused on changing behavior across generations.

These themes demonstrate a comprehensive understanding of environmental protection as not merely a scientific or regulatory obligation, but also as a social, cultural, and ethical duty.

2. Framing of Environmental and Cultural Narratives

Bantay Dagat initiatives utilized various framing strategies to render environmental issues relatable and pressing:

Heroic Representation: Fishermen and volunteers were frequently portrayed as champions protecting the oceans. This perspective honors community members and encourages local pride and involvement.

Crisis and Resilience Framing: Climate change, unlawful fishing, and coastal erosion were highlighted as urgent dangers necessitating prompt intervention. Nevertheless, these challenges were presented alongside stories of resilience, showcasing local responses and community fortitude.

Cultural Identity Framing: Campaigns emphasized the significance of marine ecosystems to local culture and livelihood, especially mangroves, which are integral to Del Carmen's identity as the capital of mangroves. Expressions like "Ang dagat ay buhay at pamana" (The sea is life and legacy) underscore the emotional and cultural context employed to resonate with shared memories and values. Visuals of traditional boats (*bangka*), and fisherfolk at work grounded the materials in local heritage.

These frames align with best practices in environmental communication, as cultural resonance is crucial for encouraging pro-environmental actions.



3. Communication Strategies for Local Participation

The content analysis uncovered various communication tools and strategies employed by Bantay Dagat to connect with different segments of the community:

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Utilization of Local Language and Visual Symbols: Resources predominantly used Cebuano or Surigaonon, ensuring accessibility. Images featured marine creatures, vessels, fishermen, and regional landmarks to enhance recognition.

Storytelling and Testimonial Strategies: Certain posters and videos showcased personal accounts of fisherfolk who transitioned from harmful practices to environmentally friendly techniques. A news article from GMA News by Mariejo Ramos, Thomson Reuters Foundation (2025), Junrey Longos of Del Carmen, once an illegal fisher turned now as part of a civilian fisheries patrol force.

*"Because life was difficult, we were forced to cut and sell mangroves back then. We couldn't find other jobs,"
Longos, 44, said. (Clip from News Article)*

to

"I started planting new mangroves when I stopped doing illegal activities in 2011," Junrey Longos said. (Clip from News Article)

These narratives demonstrated behavior change and modelled desired actions, a well-established technique in environmental education.

School-Based Campaigns and Community Workshops: IEC materials were complemented by activities in schools and barangay centers, demonstrating that the campaigns were part of broader community education initiatives.



Social Media and Online Platforms: Although there was recognition of a presence on sites like Facebook, digital strategies remained infrequent and inconsistent. There was minimal evidence of reciprocal interaction or digital engagement tactics aimed at tourists or younger digital natives.

These communication strategies indicate a community-focused approach, yet there is potential for advancement in digital creativity and engagement.

4. Cultural Relevance and Contextual Appropriateness

A significant strength of the Bantay Dagat initiatives lies in their cultural integration and local adaptation:

Integration of Traditional Ecological Knowledge (TEK): Various sources highlight customary indicators of fish availability, lunar fishing practices, and rituals for planting mangroves, affirming indigenous wisdom alongside contemporary conservation science.

Representation of Local Figures and Institutions: Utilizing well-known community figures, local groups, and religious symbols helped situate messages within everyday social frameworks.

Moral and Spiritual Appeals: Campaigns occasionally referenced Christian stewardship ideals, especially the concept of humanity as guardians of God's creation. These religious elements strengthened ethical legitimacy and community support.

However, the materials did not adequately address external audiences such as tourists, who are increasing in number and interacting with the Del Carmen marine environment. This signifies an overlooked opportunity to influence broader environmental stories through ecotourism channels. The results show that Bantay Dagat's educational initiatives in Del Carmen are firmly rooted in cultural values, local identity, and community-driven approaches. Themes primarily focus on marine conservation, community accountability, and the preservation of cultural traditions. Communication methods are effective; however, they could improve with enhanced digital strategies and focused engagement with external stakeholders. The framing and incorporation of cultural stories illustrate that conservation is not merely a scientific pursuit but a local experience grounded in ethics, heritage, and optimism.

Conclusion



This study examined the characteristics, themes, and communication methods of Bantay Dagat's educational initiatives in Del Carmen, Surigao del Norte, utilizing a qualitative content analysis of their information, education, and communication (IEC) resources. The results showed that Bantay Dagat's initiatives are based on strong community involvement, cultural significance, and environmental responsibility. The messages consistently advocate for the protection of marine biodiversity, sustainable fishing practices, and collective community stewardship. The use of regional languages, culturally significant symbols, and personal stories demonstrates a careful alignment with the socio-cultural context of Del Carmen. Campaigns often employed narratives and ethical appeals to inspire emotional and moral commitment to conservation. Furthermore, the involvement of schools, barangays, and local leaders highlights the group's ability to foster extensive community engagement.

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However, the research also identified important areas for improvement. Significantly, the lack of specific resources for visitors and limited online interaction hinder the campaigns' effectiveness. Additionally, the absence of tangible impact assessment tools suggests that the success of these campaigns in changing attitudes and behaviors is primarily based on anecdotal evidence. In general, Bantay Dagat's educational initiatives showcase a community-focused, culturally aware approach to environmental communication. The municipality of Del Carmen in Surigao del Norte is known globally for its sustainable fisheries, environmental protection, and conservation. Furthermore, with numerous national and international awards and recognitions from various non-governmental agencies worldwide, the educational campaigns initiated by Bantay Dagat make a crucial impact on the environment through the strong will and strict implementation of the Local Government Unit. Moreover, the results highlight the significance of community-oriented methods in environmental conservation, particularly in coastal and marine ecosystems where local knowledge, identity, and livelihoods are closely interconnected.

Recommendations

Based on the results, the following recommendations are proposed to enhance the effectiveness, reach, and inclusivity of Bantay Dagat's educational initiatives:

1. Enhance Digital and Interactive Participation

- Create a more cohesive and innovative digital media approach, especially through platforms such as Facebook, Instagram, TikTok, and YouTube.
- Embed interactive components like short videos, real-time Q&A sessions, surveys, and narrative reels to boost youth engagement and presence.
- Collaborate with local youth creators or digital influencers to develop content that resonates with younger audiences.



2. Enhance Communication for External Stakeholders

- Develop resources aimed at tourists and visiting stakeholders, focusing on responsible travel and environmentally friendly practices.
- Incorporate English and bilingual materials that convey conservation guidelines, regulations within Marine Protected Areas (MPAs), and local ecological principles.
- Partner with tour operators and local businesses to share materials and integrate environmental messages into tour experiences.

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3. Establish School and Youth Initiatives

- Establish environmental education programs in collaboration with local schools to ensure consistency and adherence to national educational standards.
- Expand the “Bantay Dagat” concept into a more organized program that includes mentorship, recognition, and capacity-building components.

4. Continue and Record the Incorporation of Traditional Knowledge

- Involve elders and traditional fishers more in knowledge-sharing gatherings to maintain and transmit ecological knowledge.
- Create resources that record and honor Traditional Ecological Knowledge (TEK) to strengthen cultural legacy and environmental principles.

5. Assess and Review Communication Effectiveness

- Perform consistent evaluations of the outreach, understanding, and behavioral influence of campaign materials.
- Utilize community input and collaborative assessment techniques to enhance messaging and formats for improved relevance and impact.

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